

DVP-FX700

RMT-D163A

SERVICE MANUAL

US Model
Canadian Model



SPECIFICATIONS

[DVD player]	Power supply	DC 9.8 V (AC adapter terminal), DC 7.4 V (Battery)
	Power consumption	12 W with battery
	Weight	1.4 lbs (0.65 kg) (without battery pack)
	External dimensions (W X D X H)	7.4 x 5.9 x 1.0 inches (189 x 150.3 x 26.1 mm)
	Signal system	NTSC
	Laser	Semiconductor laser, wavelength 650 nm (DVD), 780 nm (CD)
	Frequency range (audio)	DVD linear sound: 48kHz sampling 4 Hz to 20 kHz 96kHz sampling 4 Hz to 44 kHz
	Signal-to-noise ratio (audio)	More than 95 dB
	Dynamic range (audio)	More than 95 dB
	Harmonic distortion (audio)	0.08 %
[Connectors]	Operating conditions	Temperature: 41°F to 95°F, Operation status: Horizontal
	Video input/output (VIDEO In/Out)	1.0 V (p-p), 75 Ω, negative sync., ø3.5mm mini jack x 1
	S-video output	(Y) 1.0 V (p-p), 75 Ω, negative sync., Mini DIN 4-pin x 1 (C) 0.3 V (p-p), 75 Ω
	Audio output (optical audio)	Optical connector (ø3.5mm) x 1
	Audio input/output (AUDIO In/Out, analog audio)	2.0 Vrms(1 KHz, 0 dB), ø3.5mm mini jack x 1
	Earphone terminal	ø3.5mm stereo mini jack x 1

[Liquid Crystal Display]	Panel size	7 inches (16:9)
	Projection system	TN color transmission
	Driving system	a-Si TFT active matrix
	Resolution	234 x 480 (effective pixel rate: more than 99.99%)
[Supplied Accessories]	• S-Video cord 1	
	• Audio/Video connecting cord 1	
	• AC Adapter (AC-FX100) 1	
	• Power Cord 1	
	• Battery Pack (NP-FX100) 1	
	• Remote control (RMT-D163A) 1	
	• Size AA (R6) batteries 2	

* Designs and specifications are subject to change without notice.



PORTABLE CD/DVD PLAYER

SONY®

SAFETY CHECK-OUT

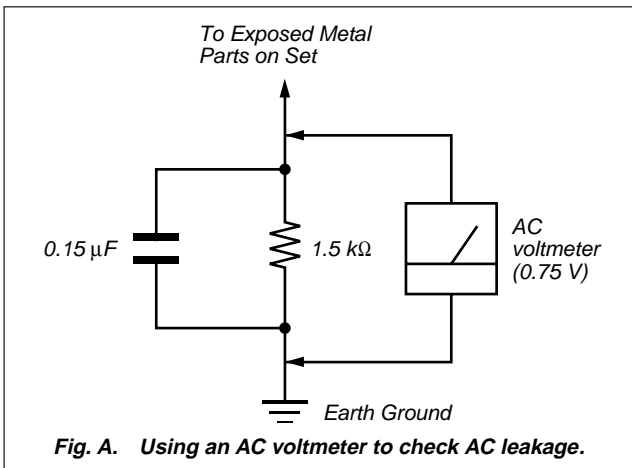
After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are “pinched” or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

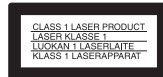


WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.



This CD/DVD player is CLASS 1 LASER PRODUCT.

CAUTION:

The use of optical instrument with this product will increase eye hazard.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE \triangle SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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SECTION 1 GENERAL

This section is extracted from instruction manual (3-088-314-11).

Precautions

For customers in the U.S.A

Owner's Record

The model and serial numbers are located on the bottom of the unit. Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. DVP-FX700

Serial No. _____

For Customers in Canada

If this product is not working properly, please call 1-877-602-2008 for

Peace of Mind Warranty Replacement service.

For other product related questions please contact our Customer

Information Service Centre at 1-877-899-7669 or write to us at: Customer Information Service 115 Gordon Baker Road, Toronto, Ontario, M2H 3R6

CAUTION

You are cautioned that any change or modifications not expressly approved in this manual could void your authority to operate this equipment.

NOTE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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Precautions (continued)

- The power requirements and power consumption of this are indicated on the AC power adaptor. Check that the unit's operating voltage is identical with your total power supply.

On safety

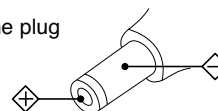
- Caution – The use of optical instruments with this product will increase eye hazard.
- To prevent fire or shock hazard, do not place objects filled with liquids, such as vases, on the apparatus.
- Should any solid object or liquid fall into the cabinet, unplug the player and have it checked by qualified personnel before operating it any further.
- Do not put any foreign objects in the DC IN 9.8V (external power input) jack.

On temperature increases

- Heat may build up while charging or during extended use. This is not a malfunction.
- If the surrounding temperature is very high the protective function will turn off the player automatically. Leave the player cool location for about 30 minutes before using it again.

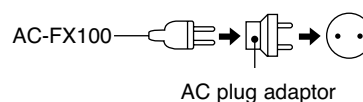
- Use only the supplied AC power adaptor. Do not use any other AC power adaptor. It may cause a malfunction.

Polarity of the plug



- If the AC power adaptor causes interference to radio reception, move it away from the radio.
- Do not touch the AC power adaptor with wet hands.
- The player is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the player itself has been turned off.
- If you are not going to use the player for a long time, be sure to disconnect the player from the wall outlet. To disconnect the AC power cord (mains lead), grasp the plug itself; never pull the cord.
- Should the AC power cord need to be changed, have it done at a qualified service shop only.
- Use a commercially available AC plug adaptor, if necessary, depending on the design of the wall outlet.

Wall outlet



AC plug adaptor

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Precautions (continued)

On the rechargeable battery

- Charge the rechargeable battery before you start using it.
- Do not allow dust to come into contact with the battery terminals of the player and rechargeable battery.
- Do not short the terminals.
- Do not open the terminal covers of the player.
- Keep the battery dry.
- Use only the rechargeable battery(NP-FX100) supplied with this player(DVP-FX700). Other rechargeable batteries supplied with other models cannot be used with this player.
- Do not disassemble.
- Do not incinerate.
- Dispose of use battery promptly.

To dispose of the rechargeable battery

- Certain countries may regulate disposal of the battery used to power this product. Please consult with your local authority.

To store the rechargeable battery

The rechargeable battery is consumed gradually as time elapses even if is not used. In order to prevent the battery from deteriorating, store the rechargeable battery as follows:

- Remove the rechargeable battery from the player after use.
- Use up the battery completely on the player before storing it.
- Keep the rechargeable battery in a cool location to prevent it from deteriorating.
- Charge and use the rechargeable battery at least once in 6 months.

On charging the rechargeable battery

- Heat may build up the rechargeable battery while charging. This is not a malfunction.
- When the battery life of a fully charged rechargeable battery becomes about half the normal life, you may need to replace the battery with a new one.
- Disconnect the rechargeable battery from the player as soon as the battery has been charged. Leaving it connected may result in reduced battery performance.

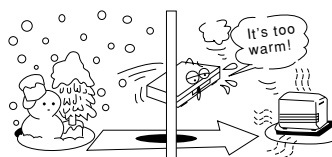
6

Precautions (continued)

On handling the player

- Keep the lens on the player clean and do not touch it. If you do so, the lens may be damaged and the player will not operate properly.
- Place the player in a location with adequate ventilation to prevent heat build-up in the player.
- Do not put any heavy object on top of the player. The player and the discs may be damaged.
- Do not leave the player in a location near heat sources, or in a place subject to direct sunlight, excessive dust or sand, moisture, rain, mechanical shock, on an unlevel surface, or in a car with its windows closed.
- Do not wrap the player in a cloth or blanket during use as it may cause malfunction or serious accidents.
- If the player causes interference to radio or television reception, turn off the player or move it away from the radio or television.
- Keep the player and discs away from equipment with strong magnets, such as microwave ovens, or larger loudspeakers.

- If the player is brought directly from a cold to warm location, or is placed in a very damp place, moisture may condense on the lenses of the player. Should this occur, the player may not operate properly. In this case, remove the disc and leave the player for about half an hour until the moisture evaporates.



- Discs with non-standard shapes (e.g. heart, square, star) cannot be played on this player. Do not use discs.
- While operating, do not move, shake or otherwise allow any shock to the player. It may cause a malfunction.
- Use this player in a stable, horizontal position where it is not subject to vibration.
- Do not touch the disc if it is still spinning when you open the lid.
- When you move the player, take out any disc you don't, the disc may be damaged.

Introductions

7

Precautions (continued)

On handing the LCD screen

- The LCD is manufactured using high precision technology. You may, however, see tiny black points and/or bright points (red, blue, green) that continuously appear on the LCD. This is a normal result of the manufacturing process and does not indicate a malfunction.
- Do not scratch the LCD or exert pressure on it. This could cause a malfunction.
- Using the player in low temperature conditions may produce a residual image on the screen. This is not a malfunction. When the player returns to normal temperature, the screen returns to normal.
- A residual image may appear on the screen if the same image is displayed for a lengthy period of time. The residual image disappears in a while.
If you are going to leave from the player for a long time, turn off power.
- The screen becomes warm during operation. This is normal and does not indicate a malfunction.

On headphones

Preventing hearing damaged

Avoid using headphones at high volume. Hearing experts advise against continuous, loud and extended play. If you experience a ringing in your ears, reduce volume or discontinue use.

Caring for others

Keep the volume at a moderate level. This will allow you to hear outside sounds and to be considerate to the people around you.

On adjusting volume

Do not turn up the volume while listening to a section with very low level inputs or no audio signals. If you do, the speakers may be damaged when a peak level section is played.

Road safety

Do not use the monitor unit and headphones while driving, cycling, or operating any motorized vehicle. It may create a traffic hazard and is illegal in some areas. It can also be potentially dangerous to play your headsets at high volume while walking, especially at pedestrian crossings. You should exercise extreme caution or discontinue use in potentially hazardous situations.

- Do not install the monitor display where viewable by the driver.
- Some states restrict the use of monitors and televisions in vehicles. Where use is permitted, the units should not be installed or operated so as to be viewable by the driver.

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Precautions (continued)

On transportation

- When you transport this player, use the original carton box and packing materials.
- Before you move this player, make sure to remove any discs from the player.

On cleaning

Clean the cabinet, panel, and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzene.

On cleaning discs

Do not use a commercially available cleaning disc. It may cause a malfunction.

IMPORTANT NOTICE

Caution: This player is capable of holding a still video image or on-screen display image on your television screen indefinitely. If you leave the still video image or on-screen display image displayed on your TV for an extended period of time you risk permanent damage to your television screen. Plasma Display Panel televisions and projection televisions are especially susceptible to this.

If you have any questions or problems concerning your player, please consult your nearest Sony dealer.

RECYCLING LITHIUM-ION BATTERIES

Lithium-Ion batteries are recyclable. You can help preserve our environment by returning your used rechargeable batteries to the collection and recycling location nearest you.



For more information regarding recycling of rechargeable batteries, call to 1-800-822-8837, or visit <http://www.rbrc.org/>

Caution:

Do not handle damaged or leaking Lithium-Ion batteries. Never expose the battery pack to temperature above 140 F (60 C) such as in a car parked in the sun or under direct sunlight.

RECYCLAGE DES ACCUMULATEURS AUX IONS DE LITHIUM

Les accumulateurs aux de lithium sont recyclables. Vous pouvez contribuer à préserver l'environnement en rapportant les piles usées dans un point de collection et recyclage le plus proche.




Pour plus d'informations sur le recyclage des accumulateurs, téléphonez le numéro gratuit 1-800-822-8837 (Etats-Unis et Canada uniquement), ou visitez <http://www.rbrc.org/>

Avertissement:

Ne pas utiliser des accumulateurs aux ions de lithium qui sont endommagées ou qui fuient.

9

About This Manual

- Instructions in this manual describe the controls on the remote. You can also use the controls on the player if they have the same or similar names as those on the remote.
- Some DVD video discs have functions that may not be explained in this owner's manual. Therefore, some instructions may differ from this owner's manual, and there may be extra instructions. In this case, follow the instructions displayed on the TV screen or package.
- “” may appear on the TV screen during operation. This icon means the function explained in this owner's manual is not available on that specific DVD video disc.

Notes about the Discs

On handling discs

- To keep the disc clean, handle the disc by its edge. Do not touch the surface.
- Do not stick paper or tape on the disc.



On storing discs

- Do not expose the disc to direct sunlight or heat sources such as air ducts, or leave it in a car parked in direct sunlight as the temperature may rise considerably inside the car.
- After playing, store the disc in its case.

On cleaning discs

- Fingerprints or dust on a disc may cause deteriorated image of sound quality. Leave the disc clean.
- Wipe the disc with a soft cloth from the center out.

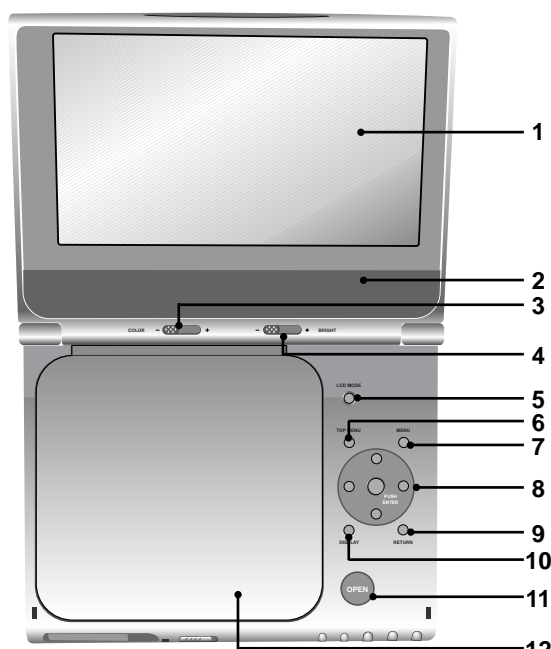



- If the disc is very dirty, first wipe it with a damp cloth, then wipe it again with a dry cloth.
- Do not use solvents such as benzine, thinner, commercially available cleaners, or anti-static spray intended for vinyl LPs.

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Identification of Controls

Main Unit



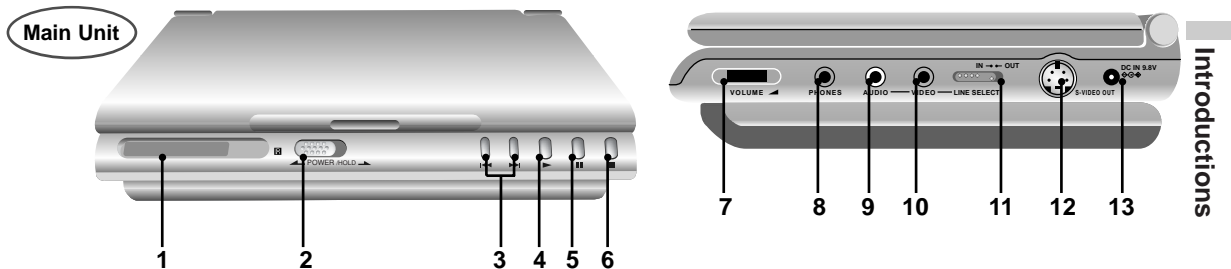
1. LCD screen
2. Speaker
3. COLOR control slide (page 21)
4. BRIGHT control slide (page 21)
5. LCD MODE (page 22)
NORMAL → FULL → ZOOM → OFF
6. TOP MENU (page 30)
displays the title menu.
7. MENU (page 30)
displays menu programs.
8.  button, ENTER button
9. RETURN button
10. DISPLAY (page 27-29)
operation mode display.
11. OPEN button (page 21)
Push this button to open the Disc lid.
12. Disc Lid

NOTE:

Place a disc with the playback side down on the spindle, and push gently on the center of the disc so it goes into position.

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Identification of Controls (continued)



1. Display Window

See details on next page.

2. POWER and HOLD switch

To turn off the power, you need to press the POWER switch for at least one second. This is to prevent the player from being accidentally turned off.

HOLD switch

- The hold function locks the buttons on the DVD player so that they will not work if accidentally touched.
- To enable, slide the HOLD switch on the left side of the DVD player to the HOLD position.
- To disable, slide the switch back to its original position.

3. PREV/NEXT buttons (page 25)

4. PLAY button (page 21)

5. PAUSE button (page 25)

6. STOP button

7. VOLUME dial (page 21)

8. PHONES connector

9. AUDIO IN/OUT/ OPTICAL OUT connector (page 57)

10. VIDEO IN/OUT connector (page 57)

11. LINE SELECT switch (page 57-61)

12. S-VIDEO OUT connector (page 21)

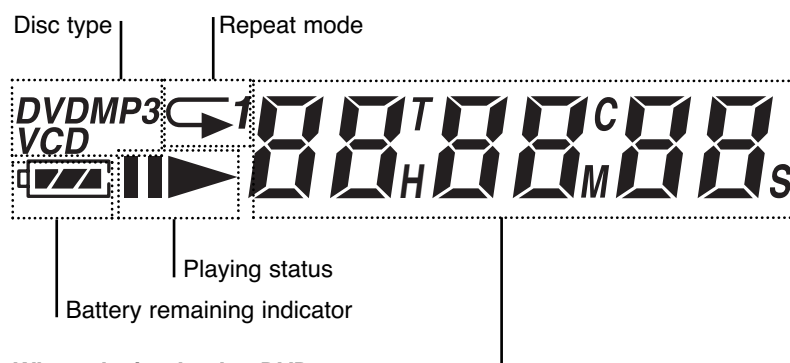
13. DC IN 9.8V connector (page 18)

Connect the AC adapter.

13

Identification of Controls (continued)

Display Window



When playing back a DVD:

Playing time of the current title or current Title/ Chapter number
(Press PLAY button while playing disc. Title/ Chapter number appears for 2 seconds.)

When playing back a VIDEO CD with Playback Control(PBC):

Playing time of the current track.

When playing back a CD, or VIDEO CD(without PBC):

Playing time of the current track and current track number.

When playing back a DATA CD(JPEG):

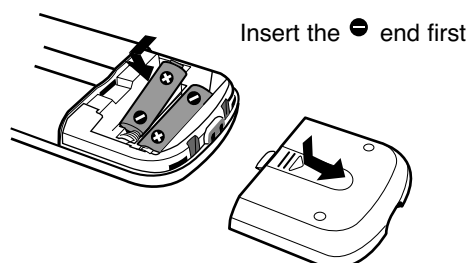
Current track number.

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Identification of Controls (continued)

Inserting batteries into the remote

You can control the player using the supplied remote. Insert two size AA(R6) batteries (supplied) by matching the \oplus and \ominus ends on the batteries to the markings inside the compartment. When using the remote, point at the remote sensor **R** on the player.



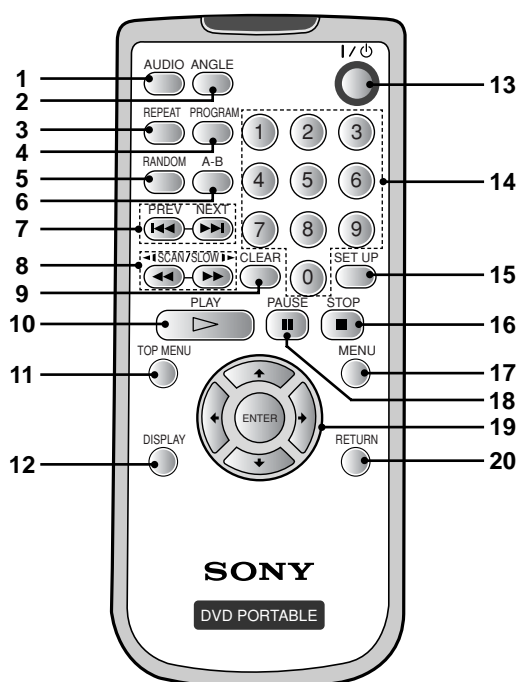
NOTES:

- Do not leave the remote in an extremely hot or humid place.
- Do not drop any foreign object into the remote casing, particularly when replacing the batteries.
- Do not expose the remote sensor to direct light from the sun or lighting apparatus. Doing so may cause a malfunction.
- If you do not use the remote for an extended period of time, remove the batteries to avoid possible damage from battery leakage and corrosion.

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Identification of Controls (continued)

Remote Control



1. AUDIO button (page 32)
2. ANGLE button (page 33)
3. REPEAT button (page 35)
4. PROGRAM button (page 38-39)
5. RANDOM button (page 37)
6. A-B button (page 36)
7. PREV/NEXT button (page 25)
8. SCAN/SLOW button (page 26)
9. CLEAR button
10. PLAY button
11. * TOP MENU button (page 30)
12. DISPLAY button (page 27-29)
13. POWER button
14. NUMBER buttons
15. SET UP button (page 45)

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Identification of Controls (continued)

16. STOP button

17. MENU button

Use the MENU button to display the menu screen included on a DVD disc.

To operate a menu screen, follow the instructions in "Using a DVD Menu" (page 30).

18. PAUSE button

19. ◀/▶/◀/▶ button, ENTER button

(up, down, left, right) for use in highlighting a selection on a GUI menu screen, TOP MENU and MENU screen.

20. RETURN button

* TOP MENU button:

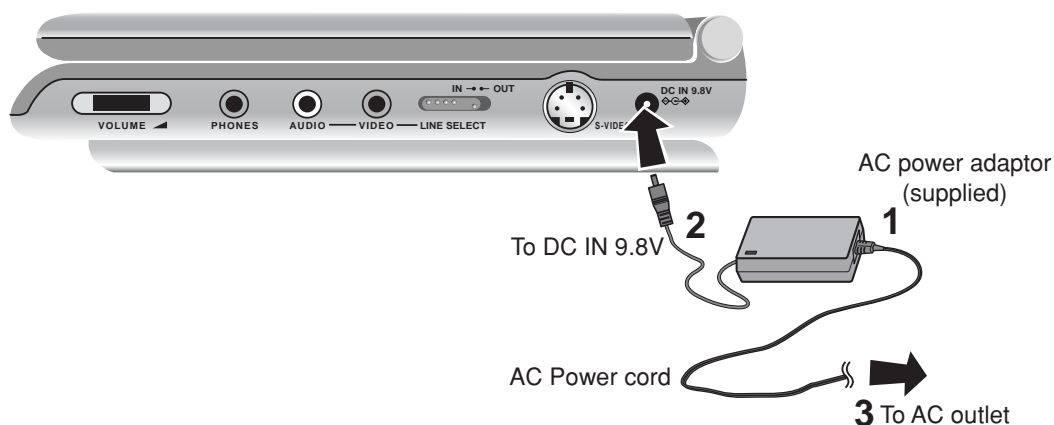
Use the TOP MENU button to display the title screen included on DVD video discs. To operate a menu screen, follow the instructions in "Using a Title Menu" (page 30)

17

Power Connections

AC power Adaptor

Follow steps 1 to 3 to connect.
When disconnecting, reverse the order.



NOTES:

- When you disconnect the AC power cord, be sure to stop playback.
- Disconnecting the AC power cord during playback may cause a malfunction.

18

1-7

Power Connections (continued)

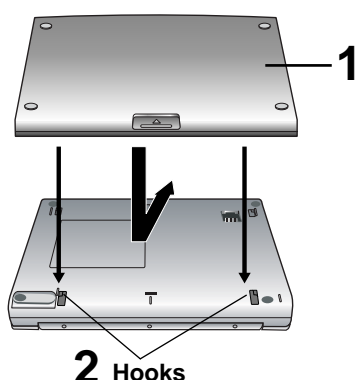
Battery Pack

You can use the NP-FX700 rechargeable battery pack (supplied) to enjoy the player when an AC outlet is not available.

- Charge the battery pack before using it for the first time.

■ Attaching the battery pack (supplied)

1. Match the hooks of the battery pack into the holes on the bottom of the player.
2. Press and slide the battery pack until the hooks click.

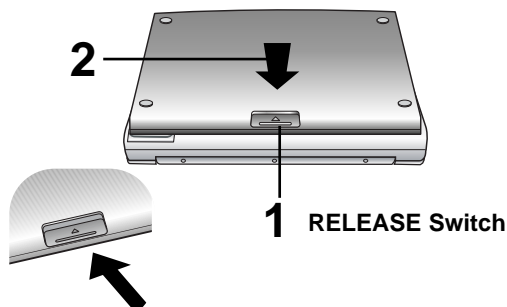


NOTES:

- Do not detach the battery pack during playback.
- Be careful not to drop the battery pack.

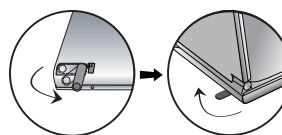
■ Detaching the battery pack

1. Press **RELEASE** switch
2. Slide the battery pack until the hooks click.



NOTE:

- If you use the battery pack separately to the main unit, use the safeguard to maintain the horizontal.

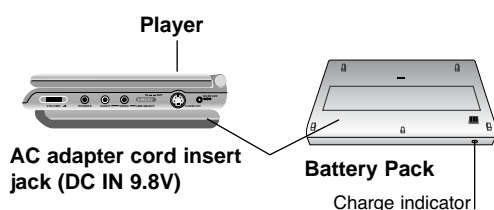


19

Power Connections (continued)

■ Charging the battery pack

1. Attach the battery pack to the player.
2. Connect the AC power adaptor to the player and the plug into an AC outlet.



3. During recharging, charge indicator is red. If recharging is complete, charge indicator changes to green color.

■ Recharging and play times

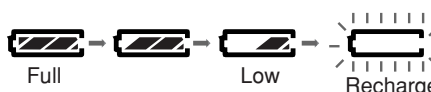
Recharging	Play time	
with player	LCD On	LCD Off
Approx. 2.6 hours	Approx. 3 hours*	Approx. 5 hours

* When Brightness control is set to “—”.

NOTES:

- Recharging times shown above depend on operating conditions.
- As for the POWER ON, you cannot charge the battery.

■ Confirm the battery charge on the unit's display window



- If using the AC adapter, battery display does not appear.

20

Basic Playback

- Prepare the power supply.

1. Open the outer cover and slide the POWER switch to the left to turn unit on.

Power indicator lights and then the indicator will disappear after 5 seconds.

2. Press OPEN to open the disc lid and insert a disc with the side you want to play label up. Close the disc lid by hand.

- If the disc is placed in upside down (and it is a single-sided disc), "NO DISC" or "DISC ERROR" appears on the TV screen.
- If you insert an audio CD, the CD indicator lights up in the display window.
- After playing back all of the chapters in the title, the DVD player automatically stops and returns to the menu screen.

3. Press PLAY to start play.

4. Adjust the volume.

NOTES:

- Place a disc with the playback side down on the spindle, and push gently on the center of the disc so it goes into position.
- Confirm LCD MODE position by pressing LCD MODE button.
- If no picture on the LCD, check that the LINE SELECT switch is set to LINE Out mode.

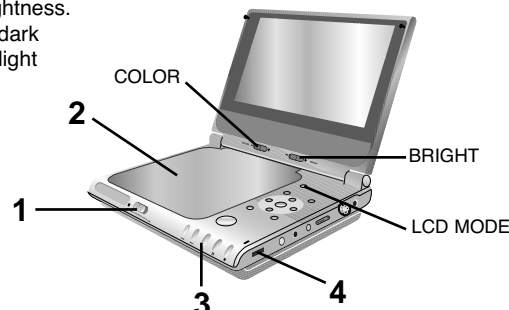
Adjusting color intensity

- Use the COLOR control slide -/+ to adjust the color shade.
 - ; black and white
 - + ; color
- Power consumption increases with the level of color.

Adjusting the brightness

Use the BRIGHT control slide -/+ to adjust the brightness.

- ; dark
- + ; light



21

Playing a Disc (continued)

■ Changing the size of the picture

Use the LCD MODE button to change the picture mode. The mode is shown on the unit's display window as follows.

DVD/Video CD disc
NORMAL → FULL → ZOOM → LCD OFF

Audio CD/MP3 disc
FULL → LCD OFF

JPEG disc
NORMAL → FULL → LCD OFF

LINE-IN
NORMAL → FULL → LCD OFF

■ The picture mode and size

The picture shown on the LCD depends on the display mode and the size recorded on the disc.

Mode	NORMAL	FULL	ZOOM	OFF
Software				
Wide-screen	Full screen 	Full screen 	Top and bottom edges are cut off. 	OFF
Regular (4:3)	Screen with blackbands on the right and left 	The normal mode screen is horizontally enlarged. 	Top and bottom edges of the full mode screen are cut off. 	OFF
Regular (4:3), Letterbox	The picture is surrounded by a black frame. 	The normal mode screen is horizontally enlarged. 	Full screen 	OFF

NOTES:

- If you are not using the LCD on this unit, select OFF to conserve power.
- The LCD is turned off if you close the unit.
- Horizontal lines may appear in the picture when the mode is switched to ZOOM, but this is not an indication of a malfunction.

22

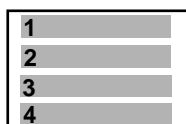
■ When a menu screen appears on the TV screen.

In case of interactive DVDs with control, a menu screen appears on the TV screen.



Example of interactive DVD On-Screen Menu

Press ◀/▶/⏮/⏭ and press ENTER, or press the numeric button(s), to select the desired item.



OR



Play of the selected item now begins.

- For further information, also refer to the jacket or case of the disc you are playing.

After operation

When the unit is not in use, remove the disc and press POWER to turn off the DVD player.

Video CD

This contains recordings of pictures and sound whose quality is on a par with that of video tape. This player also supports Video CDs with playback control (Version 2.0).

What is playback control (PBC)?

If a Video CD has "playback control" written on its disc or jacket, it means that particular scenes or information can be selected for viewing interactively with the TV monitor using the menu screen.

NOTES:

- When "⊘" appears on the TV screen while a button is pressed, it means that this function is not available on the disc you are playing.
- Depending on the DVD disc, some operations may be different or restricted. Refer to the jacket or case of the disc you are playing.

■ Stopping Play

Press STOP during playback.

■ Resume Play

When play is stopped, the unit records the point where STOP was pressed (RESUME function). Press PLAY and play will resume from this point.

NOTES:

- This operation works only with discs for which the elapsed playing time appears in the display window during stop.
- When you press the STOP button, RESUME ■ (stop) appears on the screen and the player enters the resume mode. The current play information will appear on the front panel display. Note that this information varies according to the type of disc being played. For DATA CDs, no information may be displayed depending upon the condition of the disc. For Video CDs, the information varies if PBC is ON or OFF.
- The Resume function may not be available on some DVD discs or Video CDs (version 2.0).

■ Screen Saver

The screen saver is useful to prevent your display from becoming damaged.

The screen saver picture appears when you leave the DVD player in stop mode for about 15 minutes.

Automatic power off function

After the Screen Saver has been engaged for about 15 minutes, the DVD player will automatically turn itself off.

■ Pause

Press **PAUSE** during playback.

- DVD/Video CD
The player will be placed in the still picture mode.
- CD
The player will be placed in the pause mode.

■ Skipping Chapters and Tracks

Skipping forward

Press **NEXT** **▶▶** during playback.

A chapter (DVD) or a track (CD/Video CD) is skipped each time the button is pressed.

Skipping back

Press **PREV** **◀◀** during playback.

- When the button is pressed once midway through a chapter/track, the player returns to the start of that chapter/track. When it is pressed again, a chapter/track is skipped each time the button is pressed.

For your reference:

- When **◀◀** / **▶▶** is pressed during menu play of video CDs equipped with PBC (Version 2.0), a menu screen may sometimes be recalled.

■ To Scan at Fast Forward or Fast Reverse Playback

Press **SCAN/SLOW** **◀** or **▶** button during playback.

[TV screen]



- The speed of advance (reverse) is relatively slow at first. When the button is pressed again, the speed becomes faster. (Each time the button is pressed, the speed increases up to 4 steps (DVD) or 3 steps (Video CD).)
- The speed will be retained even after the button is released.

To return to normal playback, press **PLAY**.

NOTE:

- The DVD player does not play back sound during the high speed reverse and forward playback of DVD video discs.
However, the DVD player plays back sound during fast forward or fast reverse playback of audio CDs.

■ Playing in Slow-Motion (DVD and Video CD only)

Press **SCAN/SLOW** **◀** or **▶** during Pause mode.

[TV screen]



- The speed of slow-motion is slow at first. When the button is pressed again, the speed becomes faster. (Each time the button is pressed, the speed increase up to 4 steps.)
- The speed will be retained even after the button is released.

To return to normal playback, press **PLAY**.

NOTES:

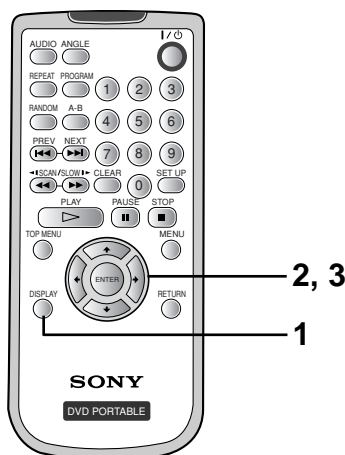
- The sound is muted during slow-motion playback.
- Subtitles do not appear on the screen during slow motion playback.
- The reverse slow does not work with Audio and Video CD.

General information about GUI Menu Icons

DVD VCD CD

This unit features GUI* Menu Icons showing disc information (title/chapter/track number, elapsed playing time, audio/subtitle language, angle, and sound) and player information (repeat play, play mode, marker, etc.). Some icons only show the indicated information. Other icons allow the settings to be changed.

* GUI: Graphic User Interface



Common procedures

1. Press DISPLAY during playback.

Title function can be accessed from the stop mode.

2. Press \leftarrow/\rightarrow to select the desired item.

The current selected item is indicated by a yellow frame on its GUI menu icons.

3. Press \leftarrow/\rightarrow to select the desired setting.

- When numbers are displayed (e.g. title number), the numeric buttons can also be used for setting instead of \leftarrow/\rightarrow .
- For some functions, the setting will be registered immediately; for others, ENTER must be pressed.

To clear the GUI Menu Icons, press DISPLAY again.

Examples of GUI Menu Icons.

(The screens may differ depending on the disc contents.)



(DVD GUI)



(Video CD GUI)



(Video CD (Version 2.0))

Operation Using GUI Menu Icons

Detailed Description of each GUI Menu Icon

DVD

You can view information about a disc and its operational status on the TV screen.

Press DISPLAY during playback. [TV screen]
DVD GUI

FUNCTION
(Press \leftarrow/\rightarrow to select desired item)

SELECTION
METHOD



Shows the current title number and total number of titles, and skips to the desired title number.

\leftarrow/\rightarrow , or Numeric
ENTER

Shows the current chapter number and total number of chapters, and skips to the desired chapter number.

\leftarrow/\rightarrow , or Numeric
ENTER
NEXT, PREV

Shows the elapsed playing time, and searches the point by the elapsed time directly.

Numeric
ENTER

Shows the current audio soundtrack language, encoding method, and channel number, and changes the setting.

\leftarrow/\rightarrow , AUDIO

Shows the current subtitles language, and changes the setting.

\leftarrow/\rightarrow

Shows the current angle number and total number of angles, and changes the angle number.

\leftarrow/\rightarrow , ANGLE

Shows the current sound mode, and changes the setting.

\leftarrow/\rightarrow





Detailed Description of each GUI Menu Icon (continued)

VCD

Press DISPLAY during playback. [TV screen]
Video CD GUI

FUNCTION
(Press \leftarrow/\rightarrow to select desired item)

SELECTION
METHOD

 1 / 3	Shows the current track number, total number of tracks and PBC On mode, and skip to the desired track number.	\leftarrow/\rightarrow , or Numeric ENTER NEXT, PREV
 0:20:09	Shows the elapsed playing time (Display only)	—
 ST	Shows the audio channel, and changes the audio channel.	\leftarrow/\rightarrow , AUDIO
 NORM.	Shows the current sound mode, and changes the setting.	\leftarrow/\rightarrow

NOTE:

- Some DVD discs may not provide all of the above GUI menu icons.

Operation Using GUI Menu Icons

29

Using a Title/DVD Menu

DVD

Using a Title Menu

Some movie discs may contain two or more titles. If the disc has a title menu recorded on it, the TOP MENU button can be used to select the movie title. (The details of operation differ depending on the disc used.)

- Selecting a title may not be possible on certain DVD discs.

1. Press TOP MENU.

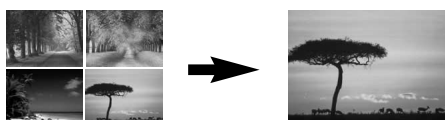
A list of the titles on the disc is displayed.



Press TOP MENU again to resume play from the scene when TOP MENU was first pressed.

- Resume play may not be possible on certain discs.
- #### 2. Press \leftarrow/\rightarrow and press ENTER or PLAY, or press the numeric button(s), to select desired title.

The selected title now starts playing.

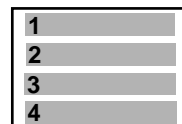


Using a DVD Menu

Some DVDs have unique menu structures called DVD menus. For example, DVDs programmed with complex contents provide guide menus, and those recorded with various languages provide menus for audio and subtitle language. Although the DVD menu's contents and operation differ from disc to disc, the following explains the basic operation when this feature is used.

1. Press MENU during play.

The DVD menu available on the disc is now displayed.



Pressing MENU again resumes play from the scene when MENU was first pressed.

- Resume play may not be possible on certain discs.

2. Press \leftarrow/\rightarrow and press ENTER, or press the numeric button(s), to select desired item.



The selected item is now executed.

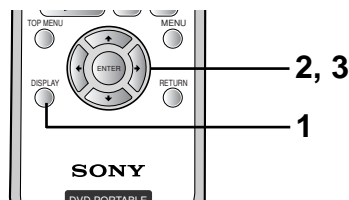
30

Changing Subtitle Language

DVD

It is possible to change the subtitle language to a different language from the one selected at the initial settings. (See page 45 for further info.)

This operation works only with discs on which multiple subtitle languages are recorded.



NOTES:

- In some cases, the subtitle language is not changed to the selected one immediately.
- When a disc supporting the closed caption is played, the subtitle and the closed caption may overlap each other on the TV screen. In this case, turn the subtitle off.
- When the desired language is not selected even after pressing the button several times, it means that the language is not available on the disc.
- When the power is turned on or the disc is removed, subtitles appear in the language selected at the initial settings. If this language is not recorded on the disc, the disc's priority language appears.

1. Press **DISPLAY** during playback.



2. Press **↕/↔** to select Subtitle item.



3. Press **↔/↕** repeatedly until the desired Subtitle is selected.

Each time this button is pressed, the TV screen display changes.

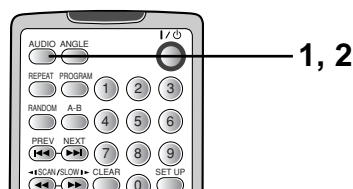
Advanced Operations

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Changing Audio Soundtrack Language

DVD VCD CD

It is possible to change the audio soundtrack language (or encoding method, channel number) to a different language from the one selected at the initial settings in case of DVD disc. (See page 45 for further info.) This operation works only with discs on which multiple audio soundtrack languages are recorded. And it is possible to change the audio channel in case of Video CD.



NOTES:

- When the desired language is not selected even after pressing the button several times, it means that the language is not available on the disc.
- When the power is turned on or the disc is removed, the language heard is the one selected at the initial settings. If this language is not recorded on the disc, only the available language on the disc will be heard.
- Some discs may not respond to Audio feature.

• DVD

1. Press **AUDIO** during play.

Number of the audio soundtrack language being played back.



2. Press **AUDIO** repeatedly until the desired language (or encoding method, channel number) is selected.



• Audio and Video CD

1. Press **AUDIO** during play.



2. Press **AUDIO** repeatedly until the desired sound is selected.

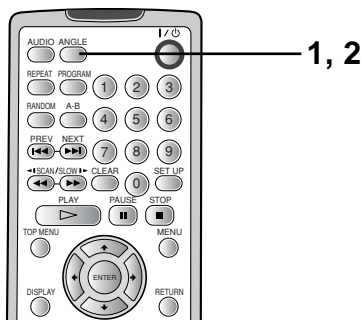
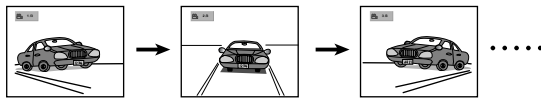


32

Viewing from another Angle

DVD

Some DVDs may contain scenes which have been shot simultaneously from a number of different angles. For these discs, the same scene can be viewed from each of these different angles using the ANGLE button. (The recorded angles differ depending on the disc used.)



1. Press ANGLE during playback.

Number of angle being played back.



2. Press ANGLE repeatedly until the desired angle is selected.



For your reference

- The ANGLE indicator will blink on the TV screen at scenes recorded at different angles to indicate that angle switching is possible.
- The angle number can be programmed beforehand; the angle will be switched to the selected number when the ANGLE indicator blinks.

NOTE:

- This function only works for discs having scenes recorded at different angles.

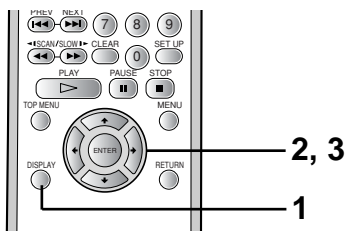
Advanced Operations

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Product a 3D Surround Effect

DVD CD

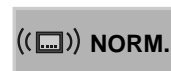
This unit can produce a 3D Surround effect, using 3D Surround Sound technology, which simulates multi-channel audio playback from two conventional stereo speakers instead of the five or more speakers normally required to listen to multi-channel audio from a home theater. This feature works with DVD discs encoded with Dolby Pro Logic and Dolby Digital audio tracks.



3D Surround Effect works only when you connect a PHONES connector or an AUDIO IN/OUT.

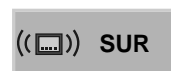
1. Press DISPLAY during playback.

2. Press \uparrow/\downarrow to select SOUND item.



3. Press \leftarrow/\rightarrow repeatedly until the desired sound is selected.

Each time this button is pressed, the TV screen display changes.



NOTES:

- This 3D Surround effect may not be available on some DVD discs, such as those recorded with a mono audio soundtrack.
- Turn off the TV surround sound and other surround effects when using this 3D surround effect.
- For best 3D Surround effect using only two speakers, it is recommended that the two speakers be positioned approximately 2 m to 2.5 m apart, and that the listening position be 2 m to 2.5 m away from the speakers.

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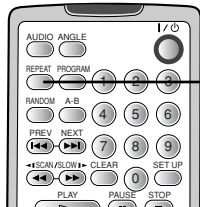
Repeat Play

DVD VCD CD

Repeating viewing (listening)

Press REPEAT during playback.

Each time this button is pressed, the TV screen changes as shown below and the disc will repeat a chapter or title (DVD) or a track (Audio and Video CD).



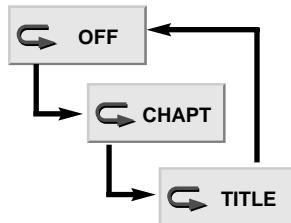
REPEAT

• DVD

Cancel repeat mode (normal play)

Repeat of chapter being played

Repeat of title being played

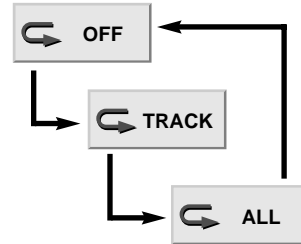


• Audio and Video CD

Cancel repeat mode (normal play)

Repeat of track being played

Repeat of entire disc contents



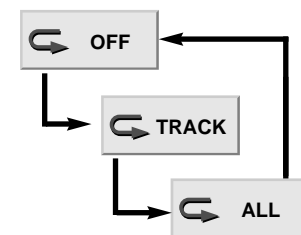
To enjoy program repeat play (Video CD)

If REPEAT is pressed during program play, repeat play is operated as below.

Cancel repeat mode (Program play)

Repeat of the current programmed track

Repeat of all programs



To return to normal play

Press REPEAT several times until "OFF" is displayed.

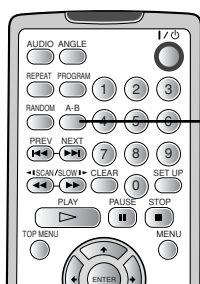
Advanced Operations

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Repeat Play (continued)

DVD VCD CD

Repeating sections between two specific points (A-B repeat)



1, 2

1. Press A-B during playback at the point where repeat play is to start (A).



• You can select "OFF" at this step by pressing CLEAR.

2. Press A-B during playback at the point where repeat play is to be concluded (B).



Repeat play of the selection between points A and B starts.

To return to normal playback

Press A-B once "OFF" is displayed.



NOTES:

- Repeat play works only with discs for which the elapsed playing time appears in the display window during playback.
- Repeat play may not work correctly with some DVDs and some Video CDs.
- A-B repeat play works only within a title DVD or a track Video CD.
- Some subtitles recorded around point A or B may fail to appear (DVD).

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Random Play

DVD VCD

Random play (Karaoke DVD, Video CD (PBC OFF))

NOTE:

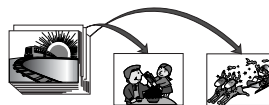
This function only works with karaoke DVD and Video CD. Random does not work with DVD movie discs.

You can playback titles or tracks in random order. (Random playback)

The DVD player automatically selects the titles on a DVD video karaoke disc only and plays them back randomly.



1, 2



1. Press RANDOM during playback.

The DVD player automatically starts random playback and the RANDOM indicator in the display window appears for 2 seconds.

RANDOM indicator also appears in the display window when new track starts to play.

2. To return to normal play.

Press RANDOM again.

NOTES:

- Random playback may not be possible on certain discs.
- If you press the ►► or ◀◀ button during random playback, the DVD player goes to another track randomly and starts playback.

37

Program Play

CD MP3

Programmed Playback with Audio CD and MP3 disc

The Program function enables you to store your favorite tracks from any disc in the player memory. Program can contain 30 tracks.

1. Press PROGRAM during playback or in the stop mode to enter the Program Edit mode.

The "P" mark will appear to the right of the word Program on the right side of the menu screen.

NOTE:

- Press PROGRAM to exit the Program Edit mode; the "P" mark will disappear.

2. Select a track by using ▲/▼, then press ENTER to place the selected track on the Program list.

3. Repeat step 2 to place additional tracks on the Program list.

4. Press ►.

The programmed track you selected last is highlighted on the program list.

5. Press ▲/▼ to select the track you want to start playing.

Press TOP MENU to move to the next page.

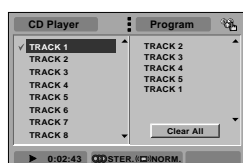
Press MENU to move to the previous page.

6. Press ► (PLAY) to start.

Playback begins in the order in which you programmed the tracks and "PROG." appears on the menu screen. Playback stops after all of the tracks on the Program list have played once.

7. To resume normal playback from programmed playback, press PROGRAM and select a track of CD (or MP3) list, then press ENTER.

"PROG." indicator disappears on the menu screen and starts normal playback.



Audio CD menu



MP3 menu

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Program Play (continued)

VCD CD MP3

Programmed Playback with Video CD

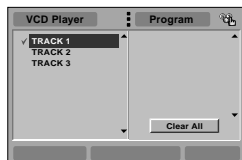
NOTE:

- On a Video CD with PBC, you must set PBC to Off on the setup menu to use the Program function.

1. Insert Video CD and close the tray.

2. Press PROGRAM while playback is stopped.

The VCD Program menu will appear.



NOTE:

- Press RETURN or PROGRAM to exit the Program menu.

3. Follow steps 2-6 of “Programmed Playback with Audio CD and MP3 disc” on page 38.

4. To resume normal playback from programmed playback, press PROGRAM during playback.

“No” indicator disappears in the display window.

Repeat Programmed Tracks

- To repeat the track currently playing, press REPEAT. The Repeat icon and “TRACK” appears on the menu screen.
- To repeat all tracks on the program list, press REPEAT a second time. The Repeat icon and “ALL” appears on the menu screen.
- To cancel Repeat mode, press REPEAT a third time. The Repeat icon and “OFF” appears on the menu screen.

Erasing a Track from Program List

- Press PROGRAM during playback (Audio CD and MP3 disc only) or in the stop mode to enter the Program Edit mode. The “ ” mark will appear.

- Press to move to the Program list.

- Use / to select the track that you wish to erase from the Program list.

- Press CLEAR.

The track will be erased from the Program list.

Erasing the Complete Program List

- Follow steps 1-2 of “Erasing a Track from Program List” as above.

- Use / to select “Clear All”, then press ENTER.

The complete Program for the disc will be erased.

The programs are also cleared when the disc is removed.

Advanced Operations

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Operation with Audio CD and MP3 disc

CD MP3

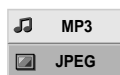
The DVD Player can play MP3 formatted recordings on CD-ROM, CD-R or CD-RW discs.

Before playing MP3 recordings, read the notes on MP3 Recordings on page 41.

1. Insert a disc and close the tray.

Audio CD; Audio CD menu appears on the TV screen go to step 4.

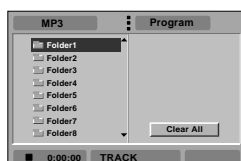
MP3 disc; The MP3-JPEG choice menu appears on the TV screen. Go to step 2



2. Press / to select the MP3 then press ENTER.

The MP3 menu appears on the TV screen.

Press RETURN to move to the MP3-JPEG choice menu.



3. Press / to select a folder, and ENTER.

A list of files in the folder appears.

4. Press / to select a track then press (PLAY) or ENTER.

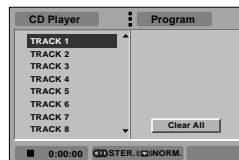
Playback starts.

During playback, the current track's elapsed playing time will appear on the display window and menu.

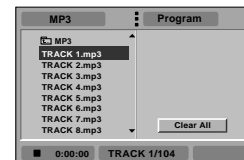
Playback will stop at the end of the disc.

Press TOP MENU to move to the next page.

Press MENU to move to the previous page.



Audio CD menu



MP3 menu

Hint

If you are in a file list and want to return to the Folder list, use the / to highlight and press ENTER to return to the previous menu screen.

5. To stop playback at any other time, press (STOP).

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Notes on MP3 Recordings

About MP3

- An MP3 file is audio data compressed by using the MPEG1 audio layer-3 file-coding scheme. We call files that have the “.mp3” file extension “MP3 files”.
- The player can not read an MP3 file that has a file extension other than “.mp3”.

MP3 disc compatibility with this player is limited as follows:

1. Sampling Frequency / only at 44.1 kHz
2. Bit rate / within 32-320 kbps CBR
3. CD-R physical format should be “ISO 9660”
4. Discs created in the Packet Write format cannot be played.
5. A single session disc requires MP3 files in the first track. If there is no MP3 file in the 1st track, it cannot playback MP3 files. If you wish to playback MP3 files, format all the data in the disc or use a new one.
6. File names should be named using 8 letters or less and must incorporate “.mp3” extension e.g. “*****.MP3”.
7. Do not use special letters such as “/ : * ? “ < > ” etc.

8. Total number of files on the disc should be less than 650.

This DVD player requires discs/recordings to meet certain technical standards in order to achieve optimal playback quality. Pre-recorded DVDs are automatically set to these standards. There are many different types of recordable disc formats (including CD-R containing MP3 files). That require certain pre-existing conditions (see above) to insure compatible playback.

9. VBR is not supported

Pause

1. Press **II** (PAUSE) during playback.
2. To return to playback, press **▷** (PLAY) or press **II** (PAUSE) again.

Moving to another Track

- Press **◀◀** or **▶▶** briefly during playback to go to the next track or to return to the beginning of the current track.
- Press **◀◀** twice briefly to step back to the previous track.
- In case of audio CD, to go directly to any track, enter the track number using the numbered buttons (0-9) during playback.

Repeat Track/All/Off

1. To repeat the track currently playing, press REPEAT.
The Repeat icon and “TRACK” appears on the menu screen.
2. To repeat all tracks on a disc, press REPEAT a second time.
The Repeat icon and “ALL” appears on the menu screen.
3. To cancel Repeat mode, press REPEAT a third time.
The Repeat icon and “OFF” appears on the menu screen.

Search

1. Press **◀◀** or **▶▶** during playback.
The player will now go into SEARCH mode.
2. Press **◀◀** or **▶▶** repeatedly to select the required speed: X 2 ◀, 1 ◀◀, 2 ◀◀ (backward) or X 2 ▶, 1 ▶▶, 2 ▶▶ (forward).
Search speed and direction are indicated on the menu screen.
3. To exit SEARCH mode, press **▷** (PLAY).

Random

1. Press RANDOM during playback or when playback is stopped.
The unit automatically begins Random Playback and RANDOM or “RAND.” appears on the display window and menu screen.
2. To return to normal playback, press RANDOM repeatedly until “RAND.” disappears on the menu screen.

Surround (Audio CD only)

This unit can produce a Surround effect, which simulates multi-channel audio playback from two conventional stereo speakers, instead of the five or more speakers normally required to listen to multi-channel audio from a home theater system.

1. Press AUDIO or DISPLAY during playback.
2. Press **◀/▶** to select “NORM.”.
3. Press **▲/▼** to select “SUR.”.

To turn off the Surround effect, select “NORM.”.

Changing the Audio Channel

(Audio CD only)

Press AUDIO repeatedly during playback to hear a different audio channel (ST, LEFT or RIGHT).

Operation with JPEG disc

JPEG

This DVD Player can play discs with JPEG files. Before playing JPEG recordings, read the notes on JPEG Recordings on page 44.

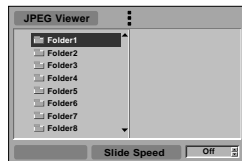
1. Insert a disc and close the tray.

The MP3-JPEG choice menu appears on the TV screen.



2. Press $\blacktriangle/\blacktriangledown$ to select the JPEG then press ENTER.


The JPEG menu appears on the TV screen.



3. Press $\blacktriangle/\blacktriangledown$ to select a folder, and ENTER.

A list of files in the folder appears. Press RETURN to move to the MP3-JPEG choice menu.

Hint

If you are in a file list and want to return to the Folder list, use the $\blacktriangle/\blacktriangledown$ on the remote to highlight “” and press ENTER to return to the previous menu screen.

4. If you want to view a particular file, press $\blacktriangle/\blacktriangledown$ to highlight a file and press ENTER or \blacktriangleright (PLAY).

Viewing the file proceeding starts.

During viewing a file, press RETURN to move to the previous menu (JPEG menu).

Press TOP MENU to move to the next page.

Press MENU to move to the previous page.

NOTE:

- Press DISPLAY to appear the information of current JPEG File. (The current number of file/ The total number of files, File size, File name)



Hint

There are three viewing Slide Speed options: Fast, Normal, Slow, and Off. Press $\blacktriangle/\blacktriangledown$ to highlight the Slide Speed then press $\blacktriangle/\blacktriangledown$ to select the option you want to use, and press ENTER.

5. To stop viewing at any other time, press \blacksquare (STOP).

The JPEG menu appears.

Advanced Operations

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Operation with JPEG disc (continued)

JPEG

Moving to another File

Press \blacktriangleleft or \blacktriangleright once during viewing a picture to advance to the next file or to the previous file.

Still Picture

1. Press \blacksquare (PAUSE) during slide show.

The player will now go into PAUSE mode.

2. To return to the slide show, press \blacktriangleright (PLAY) or press \blacksquare (PAUSE) again.

To flip the picture

Press $\blacktriangle/\blacktriangledown$ during showing a picture to flip the picture horizontally or a vertically.

To rotate picture

Press $\blacktriangleleft/\blacktriangleright$ during showing a picture to rotate the picture clockwise or counter clockwise.

Notes on JPEG Recordings

- Depending upon the size and number of the JPEG files, it could take a long time for the DVD player to read the disc's contents. If you don't see an on-screen display after several minutes, some of the files are too big — reduce the resolution of the JPEG files to less than 2 mega pixels and burn another disc.
- Total number of files and folders on the disc should be less than 650.
- Some disc may be incompatible due to different recording format or condition of disc.
- Ensure that all the selected files have the “.jpg” extensions when copying into the CD layout.
- If the files have “.jpe” or “.jpeg” extensions, please rename them as “.jpg” files.
- File names without “.jpg” extension will not be able to be read by this DVD player. Even though the files are shown as JPEG image files in windows explorer.

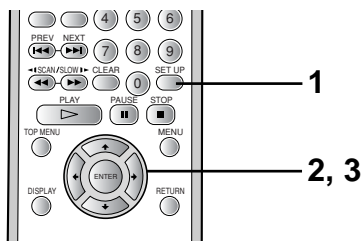
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Selection of Initial Settings

DVD

Once the initial settings have been completed, the player can always be operated under the same conditions (especially with DVD discs).

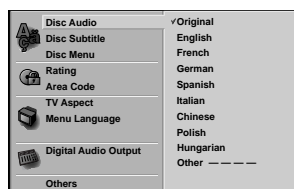
The settings will be retained in the memory until they are changed, even if the power is switched off.



Selection of initial settings

1. Press SET UP in the stop or playback mode.

The SET UP menu is displayed.



2. Press ↑/↓ to select the desired item.

The screen will show the current setting for the selected item, and the alternate setting(s).

- Disc Audio (see page 46.)
- Disc Subtitle (see page 46.)
- Disc Menu (see page 46.)
- Rating Level(see page 47.)
- Area Code (see page 48.)
- TV Aspect (see page 49.)
- Menu Language (see page 50.)
- Digital Audio Output (see pages 51-52.)
- Others (see page 53.)

3. Press → and then ↑/↓ to select the desired setting and press ENTER.

- Some items require additional steps. (See the respective page.)

When the alternate setting is selected the screen returns to the Initial Settings display.

To exit SET UP menu

Press SET UP, RETURN or PLAY.

Initial Settings

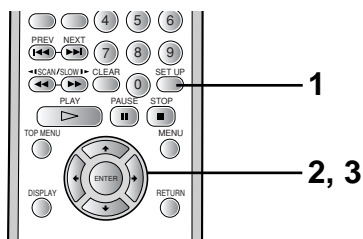
45

Selecting Disc Language

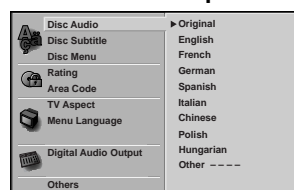
DVD

This is to select the audio soundtrack language, subtitle language and the language used in title menus or DVD menus which will always be used for every disc to be played back.

When you play back a DVD video disc, the DVD player automatically displays the pre-selected subtitle language if it is included on the disc.



1. At the SET UP menu screen, press ↑/↓ to select "Disc Audio" and press →.



2. Press ↑/↓ to select the desired language and then press ENTER.



Original :The original language of each disc will be selected.

English : English will be selected.

Other : Another language can be selected. You can input a 4-digit language code. (Refer to the language codes on page 54. Press CLEAR if an incorrect language code is entered.)

The "Disc Subtitle" and "Disc Menu" are selected by the same method.

NOTE:

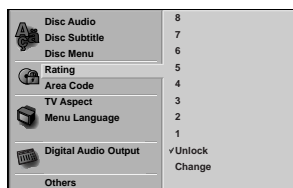
- If the language selected is not available on the disc, the original language designated by each disc will be selected.

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Selecting Rating Level



Movies on DVDs may contain scenes not suitable for children. Therefore, discs may contain Parental Control information that applies to the complete disc or to certain scenes on the disc. These scenes are rated from 1 to 8, and alternatively, more suitable scenes are available for selection on some discs. Ratings are country-dependent. The Parental Control feature allows you to prevent discs from being played by your children or to have certain discs played with alternative scenes.



Selecting rating level

1. Select "Rating" on the Setup menu using the \uparrow/\downarrow .

2. While "Rating" is selected, press \rightarrow .

3. When you have not entered a password yet.

Enter a 4-digit password using the numbered buttons to create a personal 4-digit security password. then press ENTER. Enter the 4-digit password again and press ENTER to verify.

When you have already entered a password;

Enter a 4-digit password using the numbered buttons to confirm the personal 4-digit security password, then press ENTER.

If you make a mistake before pressing ENTER, press CLEAR and enter 4-digit security password again.

4. Select a rating from 1 to 8 using the \uparrow/\downarrow buttons. One (1) has the least playback restrictions. Eight (8) has the most playback restrictions.

Unlock: If you select Unlock, Parental Control is not active. The disc will play in full.

Ratings 1 to 8: Some discs contain scenes not suitable for children. If you set a rating for the player, all disc scenes with the same rating or lower will be played. Higher rated scenes will not be played unless an alternative scene is available on the disc. The alternative must have the same rating or a lower one. If no suitable alternative is found, playback will stop. You must enter the 4-digit password or change the rating level in order to play the disc.

5. Press ENTER to confirm your rating selection, then press SET UP to exit the menu.

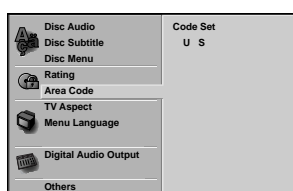
Initial Settings

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Selecting Area Code



Enter the code of a country/area whose standards were used to rate the DVD video disc, referring to the list (See "Area Code List", page 55-56.).



1. Select Area Code using the \uparrow/\downarrow on the setup menu.

2. While Area Code is selected, press \rightarrow .

3. Follow step 3 of "Rating" on left.

4. Select the first character using the \uparrow/\downarrow .

5. Shift the cursor using \rightarrow and select the second character using \uparrow/\downarrow .

6. Press ENTER to confirm your country code selection, then press SET UP to exit the menu.

NOTE:

- Confirmation of the 4-digit password is necessary when the code is changed (see "Changing the 4-digit code" below.).

Changing the 4-digit code

- 1 Follow Steps 1-2 as shown above to the left (Rating).
- 2 Enter the old code, then press ENTER.
- 3 Select Change using \uparrow/\downarrow then press ENTER.
- 4 Enter the new 4-digit code, then press ENTER.
- 5 Enter exactly the same code a second time and verify by pressing ENTER.
- 6 Press SET UP to exit the menu.

If you forget your 4-digit code

If you forget your password, to clear the current password, follow the procedure below.

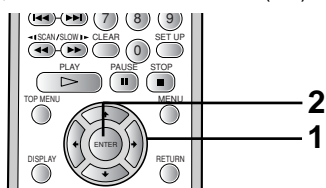
- 1 Press SET UP to display the setup menu.
- 2 Use the Number buttons to enter the 6-digit number "210499".
- 3 Enter a new code as shown above to the left (Rating).

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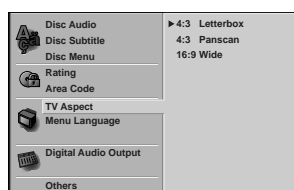
Selecting TV Aspect

DVD

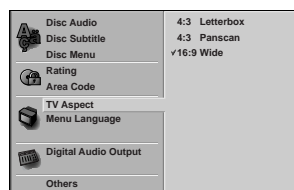
Select the appropriate screen type according to your TV set; conventional size screen (4:3) or wide-screen (16:9).



1. At the **SETUP** menu screen, press **▲/▼** to select **"TV Aspect"** and press **➡**.



2. Press **▲/▼** to select the desired Aspect and press **ENTER**.

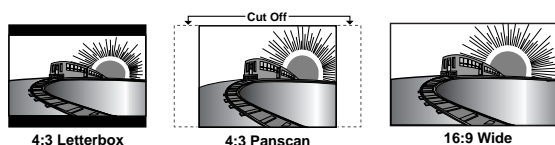


4:3 Letterbox : The video material not formatted in the Pan & Scan style is played back in the letter-box style (black bands appear at top and bottom of screen).

4:3 Panscan : Select when a conventional TV set is connected. The video material formatted in the Pan & Scan style is played back in that style (the left and right edges are cut off).

16:9 Wide : Select when a wide-screen TV set is connected. Played in **"FULL"** size. (Setting the wide-screen TV to **"FULL"** mode is also necessary.)

* Each screen shows an example when the video material for a wide-screen is played. (This setting does not affect the video material for conventional size.)



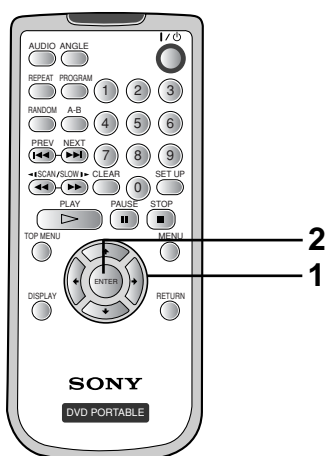
Initial Settings

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Selecting Menu Language

DVD

Selects language for **SETUP** menus and displays on the TV.



1. At the **SETUP** menu screen, press **▲/▼** to select **"Menu Language"** and press **➡**.



2. Press **▲/▼** to select the desired Language and press **ENTER**.



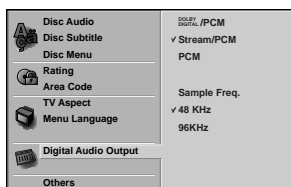
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Selecting Digital Audio Output



Each DVD disc has a variety of audio output options. Set the player's Digital Audio Output according to the type of audio system you use.

1. At the **SETUP** menu screen, press **▲/▼** to select **"Digital Audio Output"** and press **➡**.



2. Press **▲/▼** to select the desired output and press **ENTER**.

You can select Digital Audio Output or Sampling Frequency item by pressing **ENTER**.

■ Digital Audio Output

DOLBY DIGITAL/PCM: Select "DOLBY DIGITAL/PCM" if an active digital output is supplied to a Dolby Digital decoder, (or an amplifier or other equipment with Dolby Digital decoder).

Stream/PCM: Select "Stream/PCM" if an active digital output is supplied to an amplifier or other equipment with DTS decoder, Dolby Digital decoder and MPEG decoder.

PCM: Select "PCM" if an active digital output is supplied to an amplifier or other equipment with linear PCM only (or MD recorder or DAT deck).

Playback Disc	OUTPUT		
	Stream/PCM	Dolby Digital/PCM	PCM only
96 kHz Linear PCM DVD	PCM	PCM	PCM
DTS DVD	DTS bit Stream	DTS bit Stream	DTS bit Stream
Dolby Digital DVD	Dolby Digital bit Stream	Dolby Digital bit Stream	PCM
MPEG DVD	MPEG bit Stream	PCM	PCM
Audio CD/Video CD	PCM	PCM	PCM
DTS Audio CD	DTS bit Stream	DTS bit Stream	DTS bit Stream

Initial Settings

Selecting Digital Audio Output (continued)



■ Sampling Frequency

To change the Sample Frequency setting, first select the desired digital audio output type as indicated on page 51.

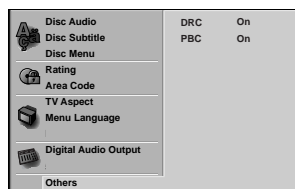
If your A/V receiver or surround processor is NOT capable of handling 96kHz signals, select the 48kHz option. When this choice is made, this unit will automatically convert any 96kHz signals to a 48kHz output so that your system is capable of decoding them. If your A/V receiver or surround processor is capable of handling 96kHz signals, select the 96kHz option. When this choice is made, this unit will pass each type of signal through without any further processing.

NOTES:

- When you are not using the player's digital audio output, don't select any of the options.
- If an active digital audio output signal is supplied to a receiver or other equipment without a corresponding digital decoding capability, a very loud noise may be produced which could permanently damage the speakers.
- The DTS DVD disc sound is played back only when the DVD player is connected to a receiver with a DTS decoder.

The DRC, PBC settings can be changed.

1. At the **SETUP** menu screen, press **↑/↓** to select **"Others"** and press **→**.



2. Press **↑/↓** to select the desired items and press **ENTER**.

The setting of the selected item are changed between On and Off.

■ DRC (Dynamic Range Compression) On/Off

- On:** Select this option to turn on the Dynamic Range Compression circuitry so that the dialogue remains clear even at low volume levels.
- Off:** Select this option to turn off the Dynamic Range Compression and have the soundtrack presented exactly as it was created.

■ PBC On/Off

Set Playback Control (PBC) to On or Off

On: Video CDs with PBC are played back according to the PBC.

Off: Video CDs with PBC are played back in the same way Audio CDs.

About DRC (Dynamic Range Compression)

With the DVD format you have the opportunity to hear a program's soundtrack in the most accurate and realistic presentation possible, thanks to the use of digital audio technology. However, in certain instances you may wish to slightly compress the dynamic range of the audio output (the difference between the loudest sounds and the quietest ones) so that you may listen to a movie at a lower volume without losing dialogue intelligibility.

NOTES:

- The DRC function works only during playback of Dolby Digital recorded discs.
- The level of Dynamic Range Compression may differ depending on the DVD disc.
- When playing karaoke, connect appropriate audio equipment (such as an amplifier) to the DVD video player.

Table of Languages and their Code Numbers

Enter the appropriate code number for the initial settings "Audio", "Subtitle" and/or "Menu" (See page 46).

Code	Language	Code	Language	Code	Language	Code	Language
6565	Afar	7079	Faroese	7678	Lingala	8375	Slovak
6566	Abkhazian	7082	French	7679	Laothian	8376	Slovenian
6570	Afrikaans	7089	Frisian	7684	Lithuanian	8377	Samoan
6577	Ameharic	7165	Irish	7686	Latvian, Lettish	8378	Shona
6582	Arabic	7168	Scots Gaelic	7771	Malagasy	8379	Somali
6583	Assamese	7176	Galician	7773	Maori	8381	Albanian
6588	Aymara	7178	Guarani	7775	Macedonian	8382	Serbian
6590	Azerbaijani	7185	Gujarati	7776	Malayalam	8385	Sudanese
6665	Bashkir	7265	Hausa	7778	Mongolian	8386	Swedish
6669	Byelorussian	7273	Hindi	7779	Moldavian	8387	Swahili
6671	Bulgarian	7282	Croatian	7782	Marathi	8465	Tamil
6672	Bihari	7285	Hungarian	7783	Malay	8469	Telugu
6678	Bengali; Bangla	7289	Armenian	7784	Maltese	8471	Tajik
6679	Tibetan	7365	Interlingua	7789	Burmese	8472	Thai
6682	Breton	7378	Indonesian	7865	Nauru	8473	Tigrinya
6765	Catalan	7383	Icelandic	7869	Nepali	8475	Turkmen
6779	Corsican	7384	Italian	7876	Dutch	8476	Tagalog
6783	Czech	7387	Hebrew	7879	Norwegian	8479	Tonga
6789	Welsh	7465	Japanese	7982	Oriya	8482	Turkish
6865	Danish	7473	Yiddish	8065	Panjabi	8484	Tatar
6869	German	7487	Javanese	8076	Polish	8487	Twi
6890	Bhutani	7565	Georgian	8083	Pashto, Pushto	8575	Ukrainian
6976	Greek	7575	Kazakh	8084	Portuguese	8582	Urdu
6978	English	7576	Greenlandic	8185	Quechua	8590	Uzbek
6979	Esperanto	7577	Cambodian	8277	Rhaeto-Romance	8673	Vietnamese
6983	Spanish	7578	Kannada	8279	Rumanian	8679	Volapük
6984	Estonian	7579	Korean	8285	Russian	8779	Wolof
6985	Basque	7583	Kashmiri	8365	Sanskrit	8872	Xhosa
7065	Persian	7585	Kurdish	8368	Sindhi	8979	Yoruba
7073	Finnish	7589	Kirghiz	8372	Serbo-Croatian	9072	Chinese
7074	Fiji	7665	Latin	8373	Singhalese	9085	Zulu

Area Code List



Enter the appropriate code number for the initial setting "Area Code" (See page 48).

Code	Area	Code	Area	Code	Area	Code	Area
AD	Andorra	BV	Bouvet Island	EH	Western Sahara	HN	Honduras
AE	United Arab Emirates	BW	Botswana	ER	Eritrea	HR	Croatia
AF	Afghanistan	BY	Belarus	ES	Spain	HT	Haiti
AG	Antigua and Barbuda	BZ	Belize	ET	Ethiopia	HU	Hungary
AI	Anguilla	CA	Canada	FI	Finland	ID	Indonesia
AL	Albania	CC	Cocos (Keeling) Islands	FJ	Fiji	IE	Ireland
AM	Armenia	CF	Central African Republic	FK	Falkland Islands	IL	Israel
AN	Netherlands Antilles	CG	Congo	FM	Micronesia	IN	India
AO	Angola	CH	Switzerland	FO	Faroe Islands	IO	British Indian Ocean Territory
AQ	Antarctica	CI	Ivory Coast	FR	France	IQ	Iraq
AR	Argentina	CK	Cook Islands	FX	France (European Territory)	IR	Iran
AS	American Samoa	CL	Chile	GA	Gabon	IS	Iceland
AT	Austria	CM	Cameroon	GB	Great Britain	IT	Italy
AU	Australia	CN	China	GD	Grenada	JM	Jamaica
AW	Aruba	CO	Colombia	GE	Georgia	JO	Jordan
AZ	Azerbaijan	CR	Costa Rica	GF	French Guyana	JP	Japan
BA	Bosnia-Herzegovina	CS	Former Czechoslovakia	GH	Ghana	KE	Kenya
BB	Barbados	CU	Cuba	GI	Gibraltar	KG	Kyrgyzstan
BD	Bangladesh	CV	Cape Verde	GL	Greenland	KH	Cambodia
BE	Belgium	CX	Christmas Island	GM	Gambia	KI	Kiribati
BF	Burkina Faso	CY	Cyprus	GN	Guinea	KM	Comoros
BG	Bulgaria	CZ	Czech Republic	GP	Guadeloupe (French)	KN	Saint Kitts & Nevis Anguilla
BH	Bahrain	DE	Germany	GQ	Equatorial Guinea	KP	North Korea
BI	Burundi	DJ	Djibouti	GR	Greece	KR	South Korea
BJ	Benin	DK	Denmark	GS	S. Georgia & S. Sandwich Isls.	KW	Kuwait
BM	Bermuda	DM	Dominica	GT	Guatemala	KY	Cayman Islands
BN	Brunei Darussalam	DO	Dominican Republic	GU	Guam (USA)	KZ	Kazakhstan
BO	Bolivia	DZ	Algeria	GW	Guinea Bissau	LA	Laos
BR	Brazil	EC	Ecuador	GY	Guyana	LB	Lebanon
BS	Bahamas	EE	Estonia	HK	Hong Kong	LC	Saint Lucia
BT	Bhutan	EG	Egypt	HM	Heard and McDonald Islands	LI	Liechtenstein

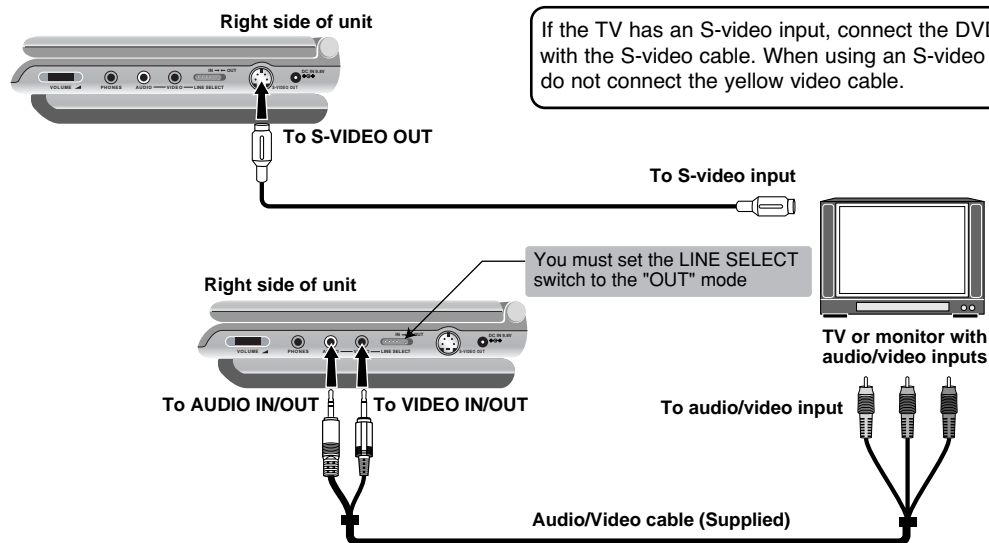
Initial Settings

Area Code List (continued)



Code	Area	Code	Area	Code	Area	Code	Area
LK	Sri Lanka	NF	Norfolk Island	SD	Sudan	TW	Taiwan
LR	Liberia	NG	Nigeria	SE	Sweden	TZ	Tanzania
LS	Lesotho	NI	Nicaragua	SG	Singapore	UA	Ukraine
LT	Lithuania	NL	Netherlands	SH	Saint Helena	UG	Uganda
LU	Luxembourg	NO	Norway	SI	Slovenia	UK	United Kingdom
LV	Latvia	NP	Nepal	SJ	Svalbard and Jan Mayen Islands	UM	USA Minor Outlying Islands
LY	Libya	NR	Nauru	SK	Slovak Republic	US	United States
MA	Morocco	NU	Niue	SL	Sierra Leone	UY	Uruguay
MC	Monaco	NZ	New Zealand	SM	San Marino	UZ	Uzbekistan
MD	Moldavia	OM	Oman	SN	Senegal	VA	Vatican City State
MG	Madagascar	PA	Panama	SO	Somalia	VC	Saint Vincent & Grenadines
MH	Marshall Islands	PE	Peru	SR	Suriname	VE	Venezuela
MK	Macedonia	PF	Polynesia (French)	ST	Saint Tome and Principe	VG	Virgin Islands (British)
ML	Mali	PG	Papua New Guinea	SU	Former USSR	VI	Virgin Islands (USA)
MM	Myanmar	PH	Philippines	SV	El Salvador	VN	Vietnam
MN	Mongolia	PK	Pakistan	SY	Syria	VU	Vanuatu
MO	Macau	PL	Poland	SZ	Swaziland	WF	Wallis and Futuna Islands
MP	Northern Mariana Islands	PM	Saint Pierre and Miquelon	TC	Turks and Caicos Islands	WS	Samoa
MQ	Martinique (French)	PN	Pitcairn Island	TD	Chad	YE	Yemen
MR	Mauritania	PR	Puerto Rico	TF	French Southern Territories	YT	Mayotte
MS	Montserrat	PT	Portugal	TG	Togo	YU	Yugoslavia
MT	Malta	PW	Palau	TH	Thailand	ZA	South Africa
MU	Mauritius	PY	Paraguay	TJ	Tadjikistan	ZM	Zambia
MV	Maldives	QA	Qatar	TK	Tokelau	ZR	Zaire
MW	Malawi	RE	Reunion (French)	TM	Turkmenistan	ZW	Zimbabwe
MX	Mexico	RO	Romania	TN	Tunisia		
MY	Malaysia	RU	Russian Federation	TO	Tonga		
MZ	Mozambique	RW	Rwanda	TP	East Timor		
NA	Namibia	SA	Saudi Arabia	TR	Turkey		
NC	New Caledonia (French)	SB	Solomon Islands	TT	Trinidad and Tobago		
NE	Niger	SC	Seychelles	TV	Tuvalu		

Connecting to a TV

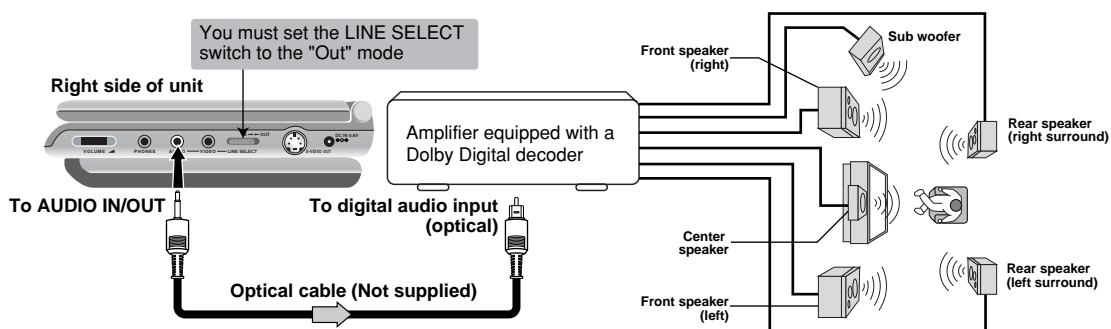


NOTES:

- Refer to the owner's manual of your TV as well.
- Before you connect the DVD player to your TV, be sure to turn off the power and unplug both units from the wall outlet before making any connections.
- **Connect the DVD player to your TV directly.** If you connect the DVD player to a VCR, the playback picture will be distorted because DVD video discs are copy protected.

57

Connecting to an amplifier equipped with a Dolby Digital decoder



To enjoy Dolby Digital sound from this DVD player you need the following:

- DVD recorded in Dolby Digital
- 6 channel receiver equipped with a Dolby Digital decoder, or Dolby Digital processor and power receiver
- 5 speakers and 1 sub woofer
- Set the Digital Audio Output of this DVD player to "Dolby Digital" from the SETUP menu

Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic", and the double-D symbol are trademarks of Dolby Laboratories.

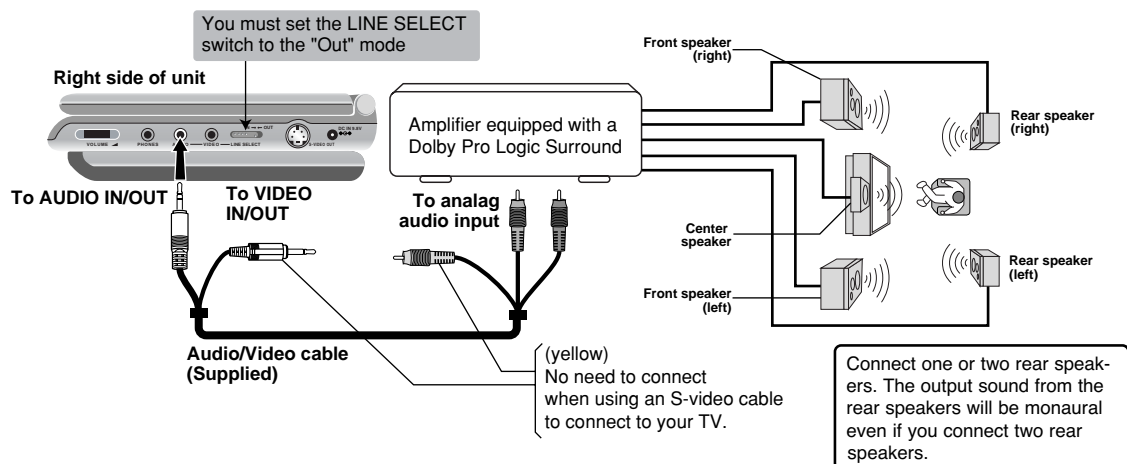
58

Connecting to an amplifier equipped with a Dolby Pro Logic Surround

Dolby Pro Logic Surround

You can still enjoy the excitement of Surround Sound even if your A/V receiver does not offer Dolby Digital decoding.

If your A/V receiver has a Dolby Pro Logic II/ Pro Logic decoder, refer to the following connection diagram.



- **With a receiver equipped with Dolby Digital**
Connect the equipment the same way as described in "Connecting to an amplifier equipped with a Dolby Digital decoder" on the previous page. Refer to that receiver's owner's manual and set the receiver so you can enjoy Dolby Pro Logic Surround sound.

NOTE:

- Be sure to set Digital Audio Output of this DVD player to "PCM" from the SETUP menu when you enjoy sounds of Dolby Pro Logic Surround using this connection.

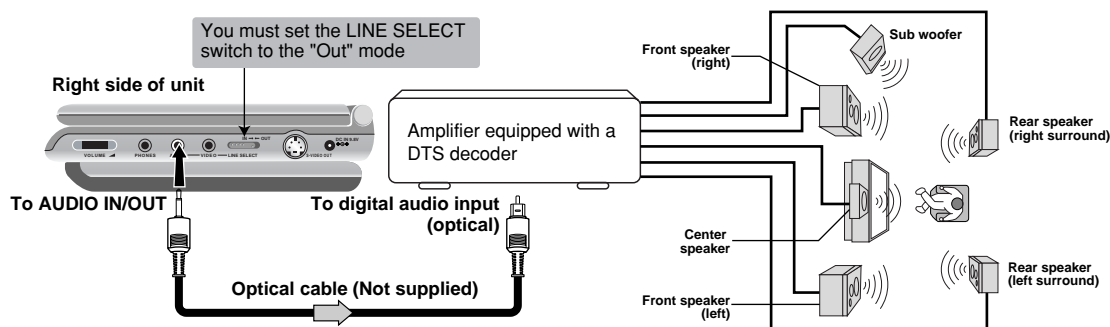
Connections

59

Connecting to an amplifier equipped with a DTS decoder

Digital Theater System(DTS)

DTS is high quality surround technology used in theaters and now available for home use, on DVD video discs or audio CDs. If you have a DTS decoder or processor, you can obtain the full benefit of 5.1 channel DTS encoded sound tracks on DVD video discs or audio CDs.



"DTS" and "DTS Digital Out" are trademarks of Digital Theater Systems, Inc.

NOTE:

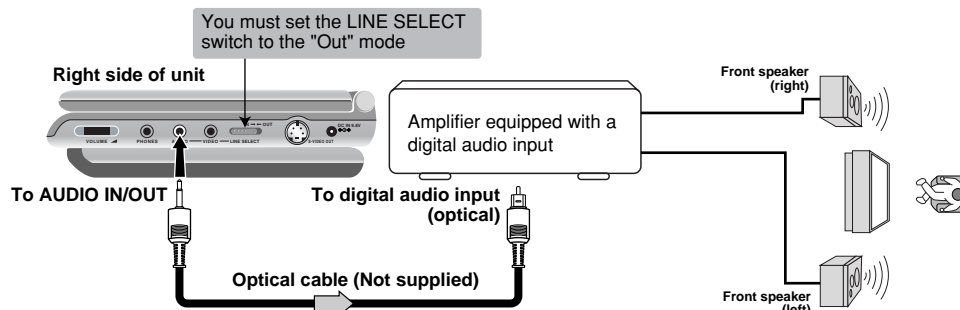
- When you are connecting (via the OPTICAL OUT) an AV decoder that does not have the Dolby Digital, Digital Theater System (DTS) or MPEG2 decoding, be sure to set Digital Audio Output of this DVD player to "PCM" from the SETUP menu. Otherwise, high volume sound may damage your hearing as well as the speakers.

60

Connecting to an amplifier equipped with a digital audio input

2 Channel Digital Stereo

You can enjoy the dynamic sound of 2 Channel Digital Stereo by connecting this DVD player to a receiver equipped with a digital audio input and speaker system (right and left front speakers).



NOTES:

For all connections

- Connect the OPTICAL OUT of the player to the "OPTICAL" input of a Receiver or Processor.
- Refer to the owner's manual of your audio equipment as well.
- Before you connect the DVD player to other equipment, be sure to turn off the power and unplug all of the equipment from the wall outlet before making any connections.
- The output sound of the DVD player has a wide dynamic range. Be sure to adjust the receiver's volume to a moderate listening level. Otherwise, the speakers may be damaged by a sudden high volume sound.
- Turn off the receiver before you connect or disconnect the DVD player's power cord. If you leave the receiver power on, the speakers may be damaged.

61

Disc Requirements

Playable Discs

This DVD player can play back the following discs.

	Disc mark	Contents	Disc size	Maximum playback time
DVD video discs		Audio+Video (moving pictures)	12 cm	Approx. 4 hours (single sided disc)
				Approx. 8 hours (double sided disc)
			8 cm	Approx. 80 minutes (single sided disc)
				Approx. 160 minutes (double sided disc)
Video CDs		Audio+Video	12 cm	74 minutes
			8 cm	20 minutes
Audio CDs		Audio	12 cm	74 minutes
			8 cm	20 minutes

In addition, this unit can play a DVD-RW (Video Mode), DVD-R, DVD+RW, SVCD and CD-R or CD-RW that contains audio titles or MP3 or JPEG files.

You cannot playback discs other than those listed above.

(CVD, CD-ROM, CD-Extra, CD-G, and CD-i discs can not be played on this DVD player.)

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Copyright Information

Region Management Information

Region Management Information: This DVD Player is designed and manufactured to respond to the Region Management Information that is recorded on a DVD disc. If the Region number described on the DVD disc does not correspond to the Region number of this DVD player, this DVD player cannot play that disc.



The Region number of this DVD player is 1.

Note on Unauthorized Discs

You may not be able to play back some DVD video discs on this player if they were purchased from outside your geographic area or made for business purposes. When you try to play back an unauthorized disc, **"Check Regional Code"** appears on the TV screen.

Note on Copyright

It is forbidden by law to copy, broadcast, show, broadcast on cable, play in public, and rent copyrighted material without permission. DVD video discs are copy protected, and any recordings made from these discs will be distorted. This product incorporates copyright protection technology that is protected by U.S. patents and other intellectual property rights. Use of this copyright protection technology must be authorized by Macrovision, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision. Reverse engineering or disassembly is prohibited.

Reference

63

Before Calling Service Personnel

Symptoms and Correction

Check the following guide for the possible cause of a problem before contacting service.

Symptom	Cause	Correction
No power.	• The power cord is disconnected.	• Plug the power cord into the wall outlet securely.
	• Hold switch is set to HOLD position.	• Release the hold mode.
	• The battery is discharged.	• Recharge the battery.
The power is on, but the DVD player does not work.	• No disc is inserted.	• Insert a disc. (Check that the DVD or, audio CD indicator in the display window is lit.)
No picture on the LCD or TV (including video from another unit).	• The video cable is not connected securely.	• Connect the video cable into the jacks securely.
	• The AV LINE SELECT Out switch is not set correctly.	• Set the LINE SELECT In/Out switch correctly. - While you are playing a disc, set the LINE SELECT Out switch to Out mode - While you are viewing video from other equipment, set the LINE SELECT In/Out switch to In mode.
	• LCD mode is set to OFF.	• Select a LCD mode other than OFF.
	• Check that Brightness control is set to "—".	• Adjust the brightness.
	• The TV is not set to receive DVD signal output.	• Select the appropriate video input mode on the TV so the picture from the DVD player appears on the TV screen.
	• The connected TV power is turned off.	• Turn on the TV.

64

Before Calling Service Personnel (continued)

Symptom	Cause	Correction
No sound.	• The equipment connected with the audio cable is not set to receive DVD signal output.	• Select the correct input mode of the audio receiver so you can listen to the sound from the DVD player.
	• The audio cables are not connected securely.	• Connect the audio cable into the jacks securely.
	• The power of the equipment connected with the audio cable is turned off.	• Turn on the equipment connected with the audio cable.
	• The Digital Audio Output is set to the wrong position.	• Set the Digital Audio Output to the correct position, then turn on the DVD player again.
The playback picture is poor.	• The disc is dirty.	• Clean the disc.
The DVD player does not start playback.	• No disc is inserted.	• Insert a disc. (Check that the disc indicator in the display window is lit.)
	• An unplayable disc is inserted.	• Insert a playable disc. (Check the disc type, color system and Regional code.)
	• The disc is placed upside down.	• Place the disc with the playback side down.
	• The disc is not placed within the guide.	• Place the disc on the disc tray correctly inside the guide.
	• A menu is on the TV screen.	• Press the SETUP button to turn off the menu screen.
	• The Rating level is set.	• Cancel the Rating function or change the rating level.

Reference

65

Before Calling Service Personnel (continued)

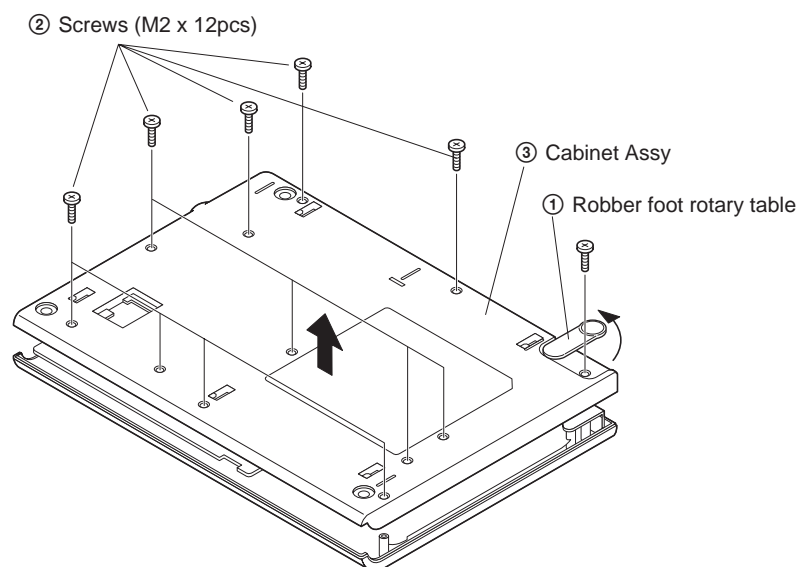
Symptom	Cause	Correction
The LCD is dark.	• Check that Brightness control is set to “—”.	• Adjust the brightness.
No response when buttons are pressed.	• Some discs prohibit certain operations.	• “⊘” may appear on the screen during operation.
	• Hold switch is set to HOLD position.	• Release the hold mode.
The remote control does not work properly.	• The remote control is too far from the DVD player.	• Operate the remote control within about 23 ft (7 m).
	• There is an obstacle in the path of the remote control and the DVD player.	• Remove the obstacle.
	• The batteries in the remote control are exhausted	• Replace the batteries with new ones.

66

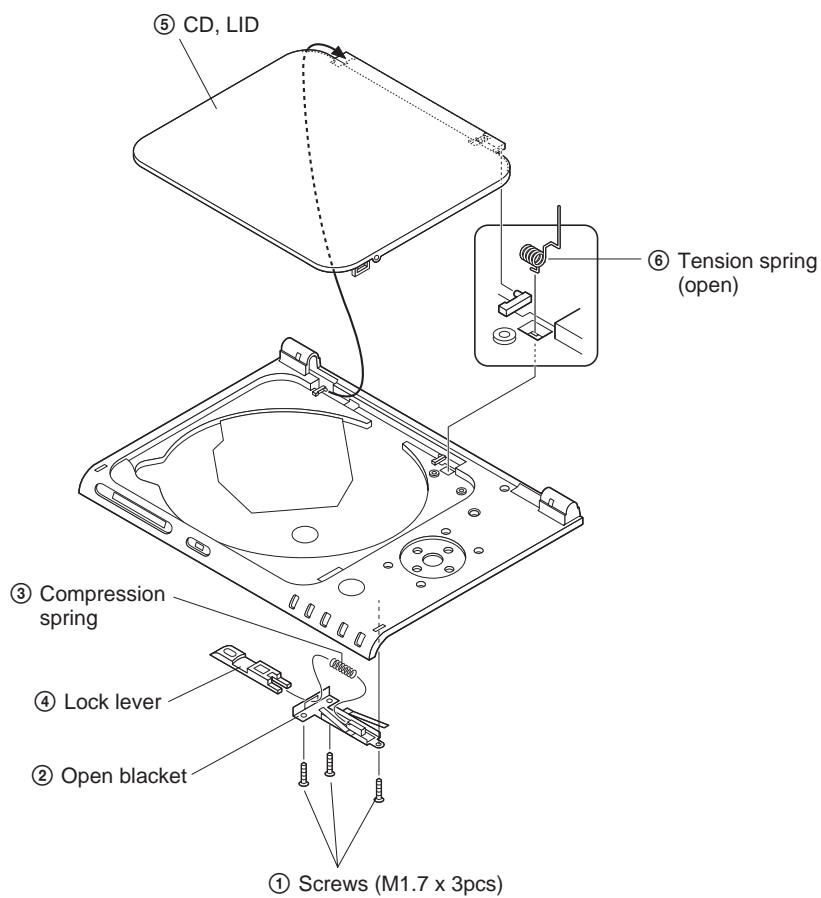
SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

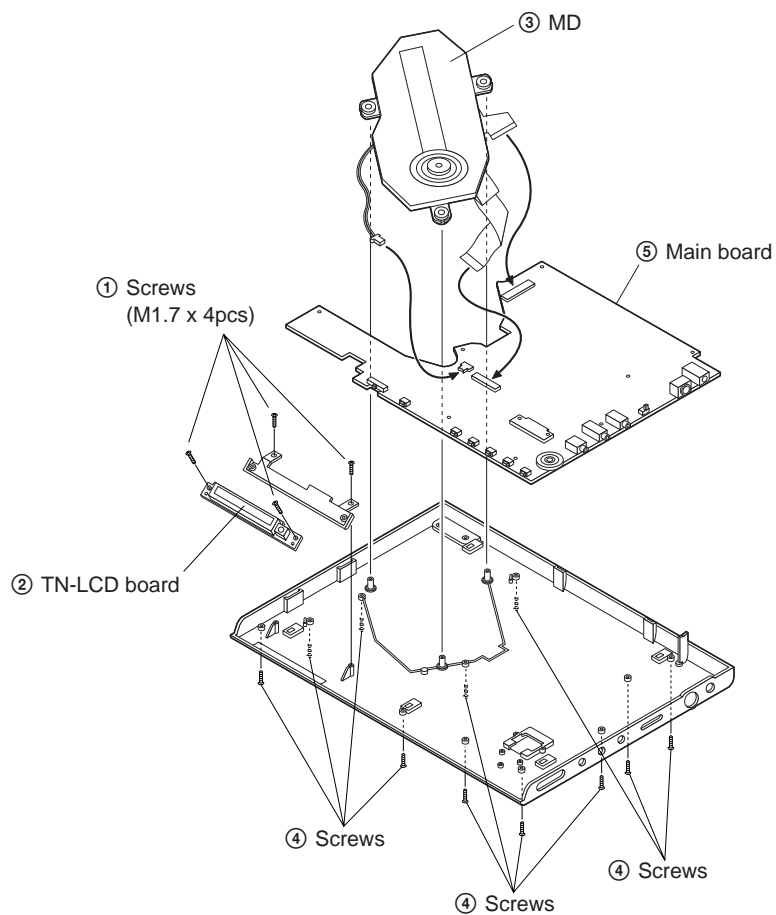
2-1. CABINET ASSY REMOVAL



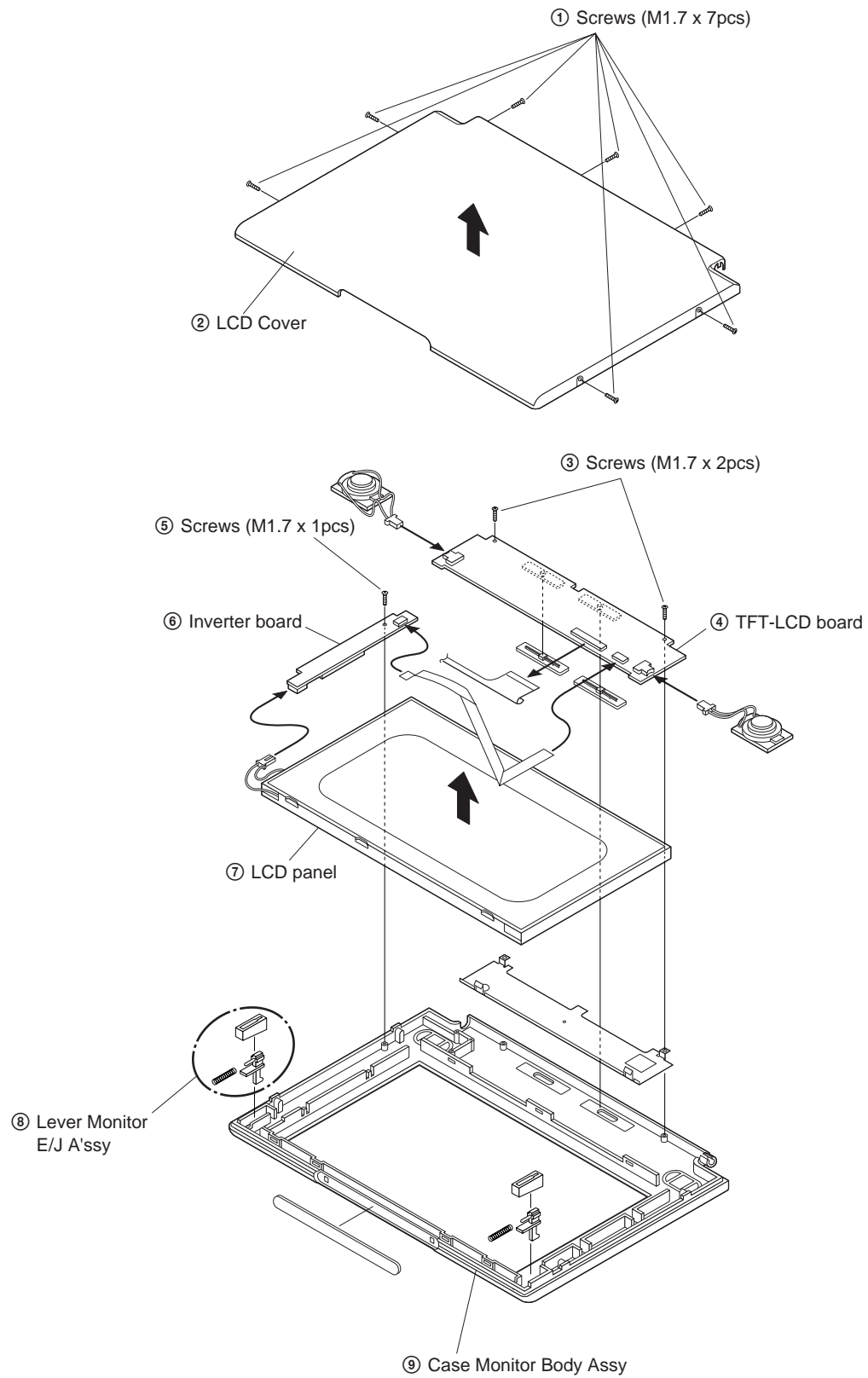
2-2. CD LID REMOVAL



2-3. MD, MAIN BOARD REMOVAL

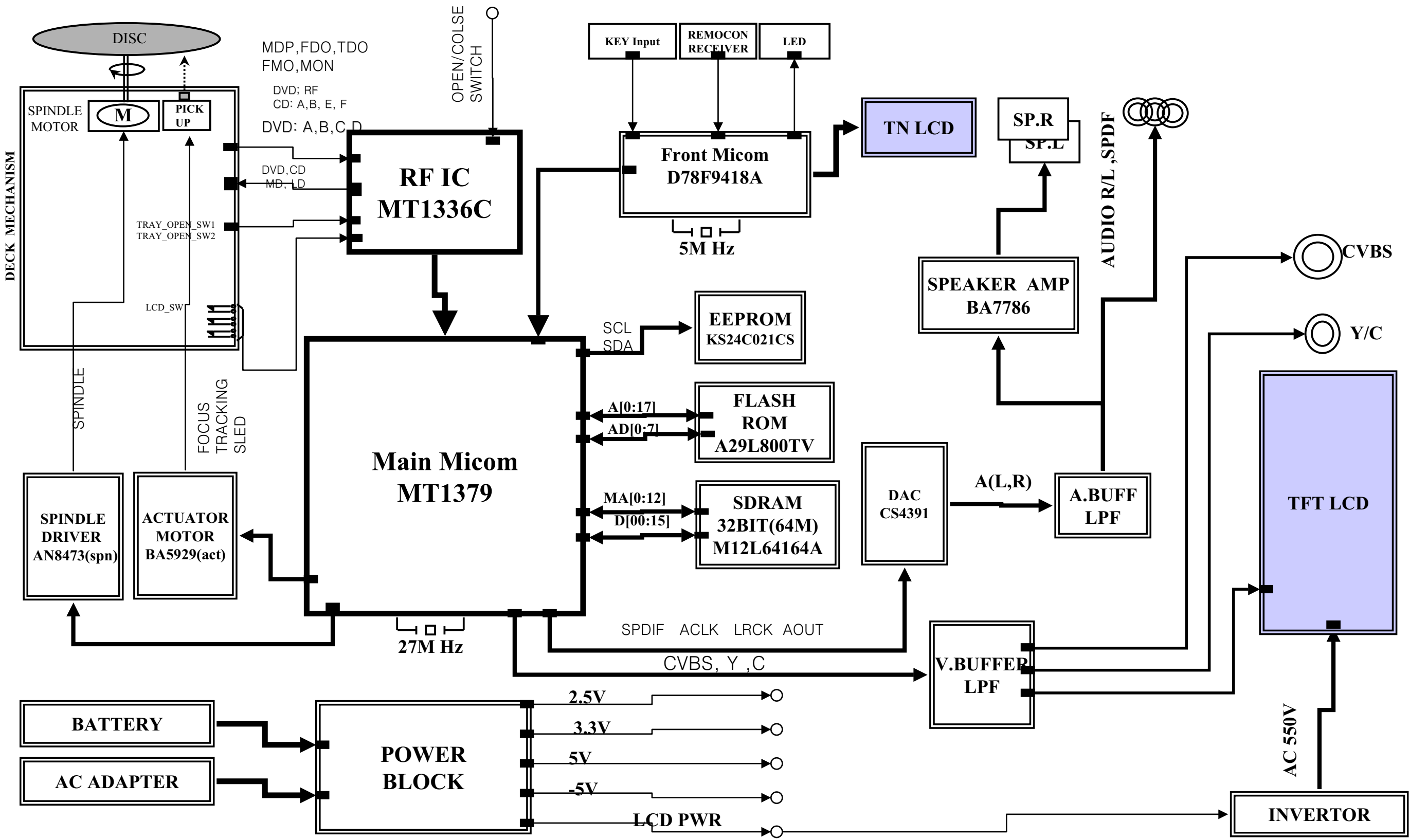


2-4. LCD PANEL REMOVAL



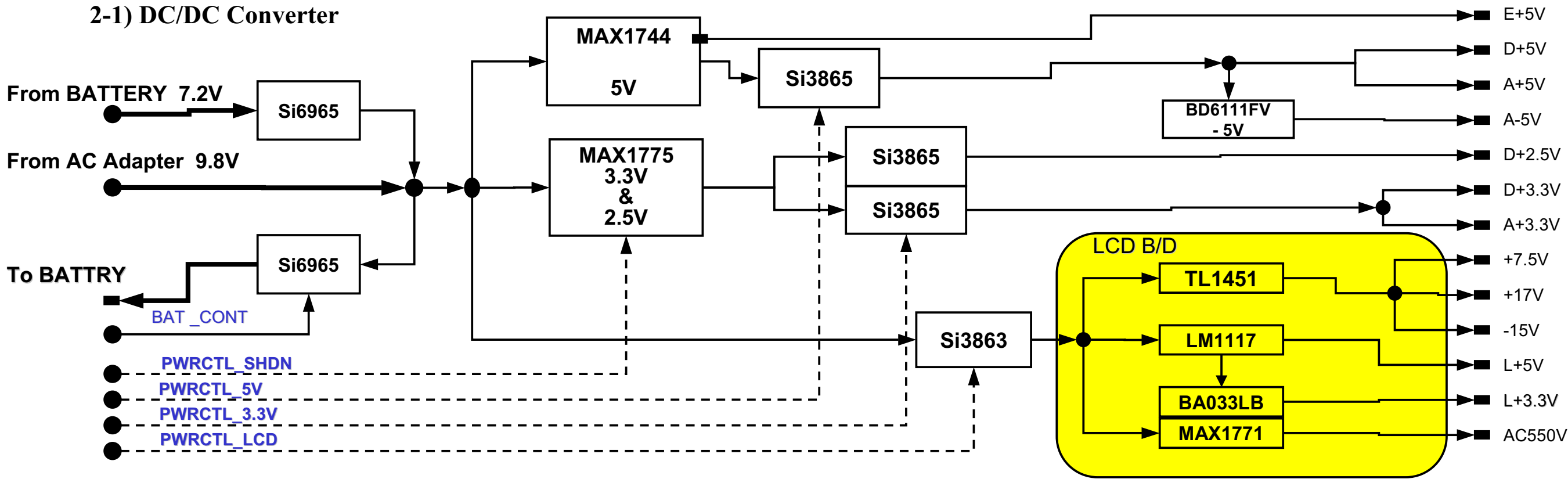
SECTION 3
BLOCK DIAGRAMS

1) System Block Diagram



2) Power Block

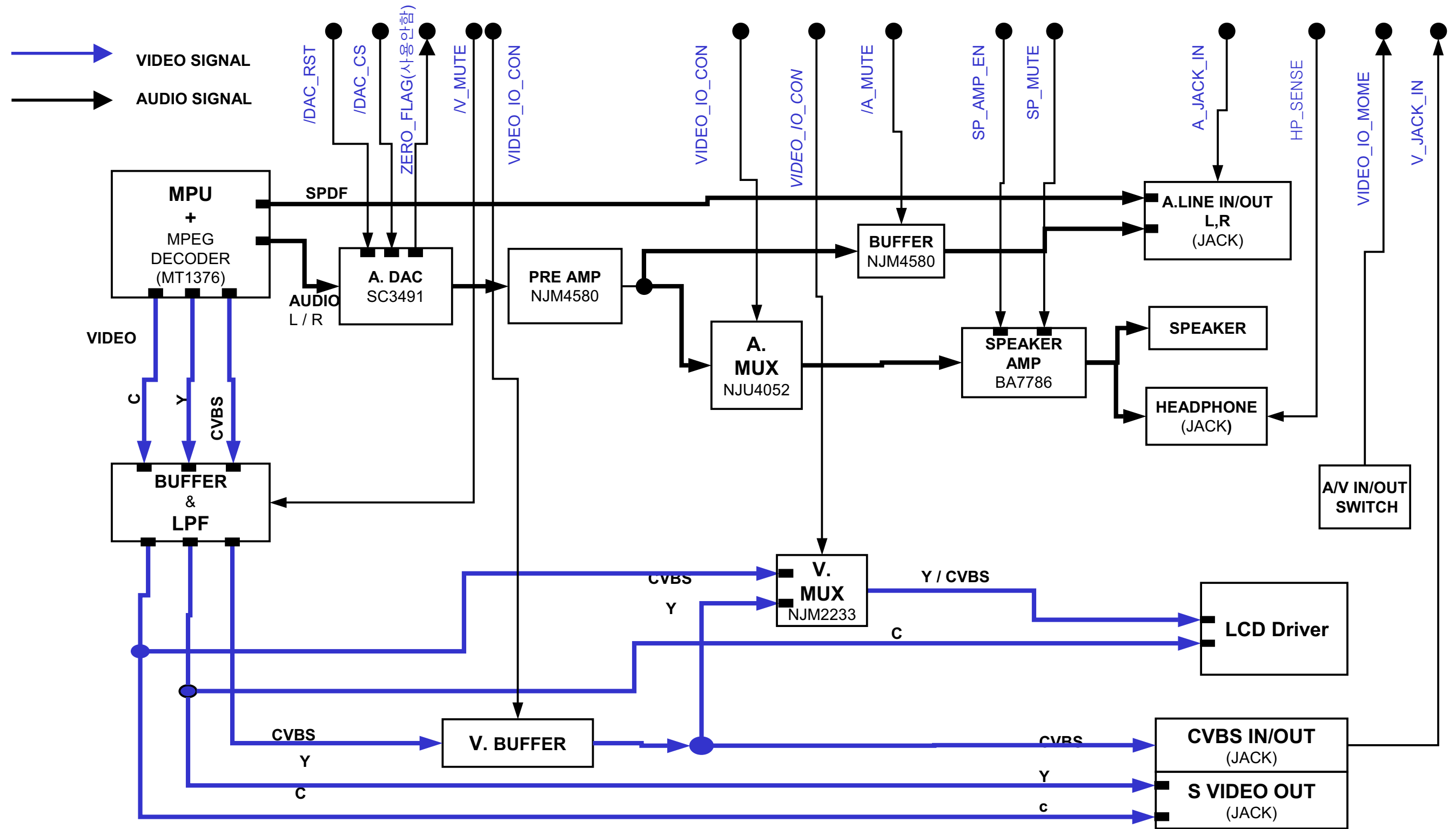
2-1) DC/DC Converter



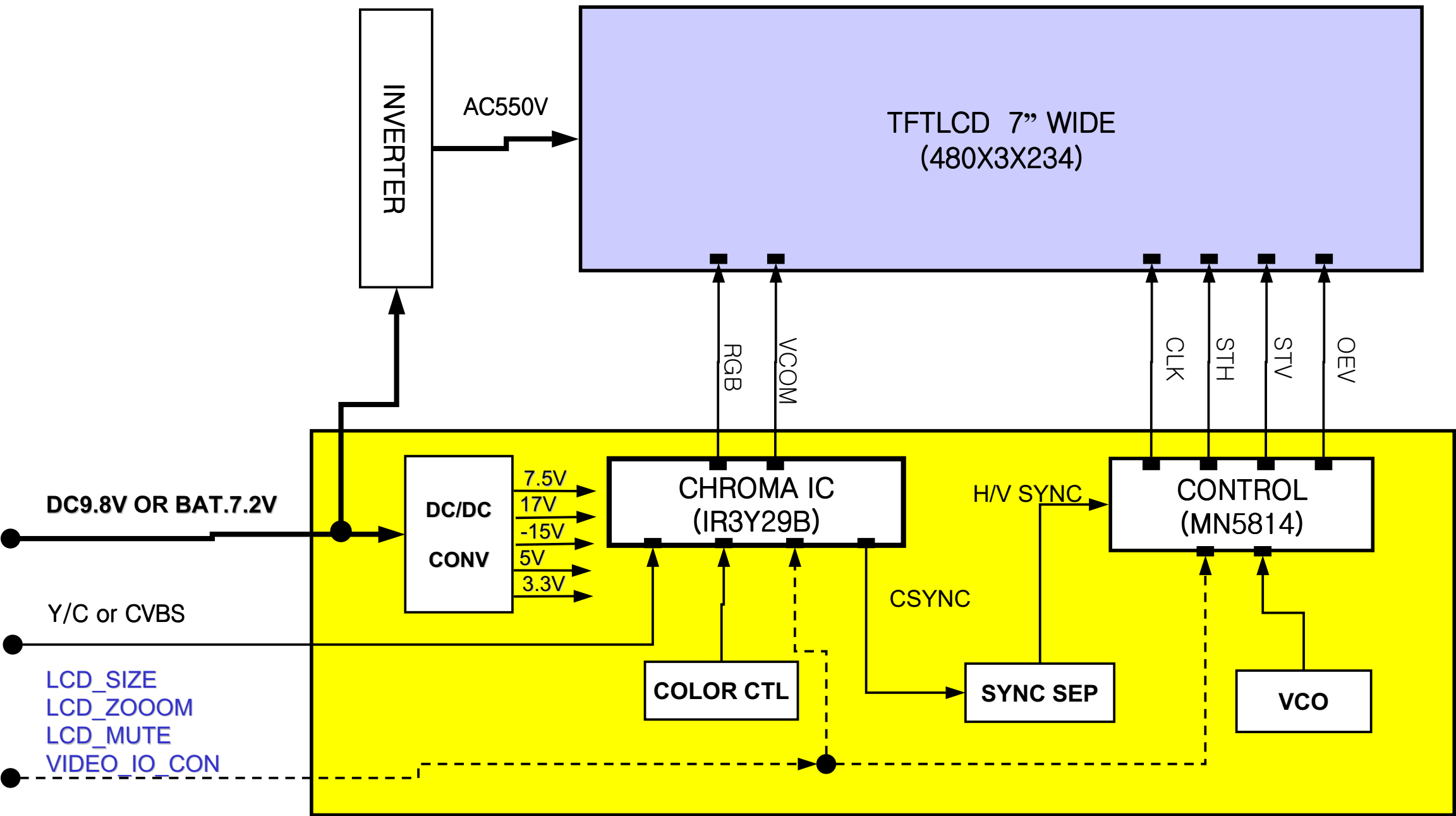
2-2) Voltage

	Voltage	min	max	%	
1	+2.5	2.375	2.625	5%	MCU(MT1379)
2	+3.3	3.135	3.465	5%	MCU(MT1379), CPLD, SDRAM
3	+5.0	4.75	5.25	5%	SERVO, DRIVER, P/U, RF(MT1336)
4	-5.0	-5.25	-4.75	5%	AUDIO
5	+9.8(ADP) +7.2 (BAT)	9.0 6.5	10.2 8.4		DC-DC CONVERTOR, LCD PANNEL
6	+17, -15, +7.5			5%	LCD 내부회로
7	+5 , +3.3			5%	LCD 내부회로
8	AC550				CCFL BACK LIGT (INVERTOR 전압)

3) Audio / Video BLOCK



4) TFT-LCD BLOCK



*STH : Source scanning

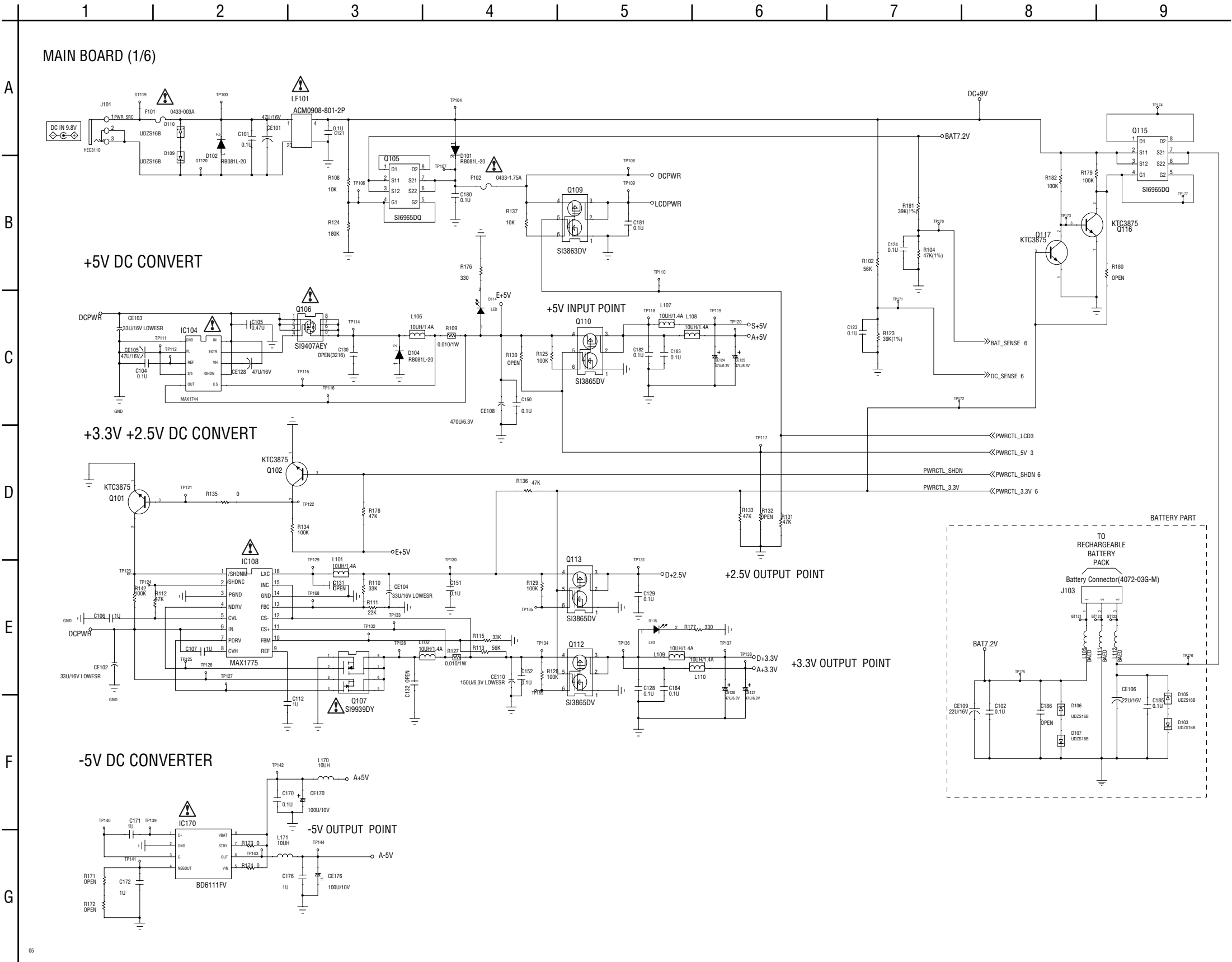
*STV: Gate scanning

*OEV: Gate driver enable

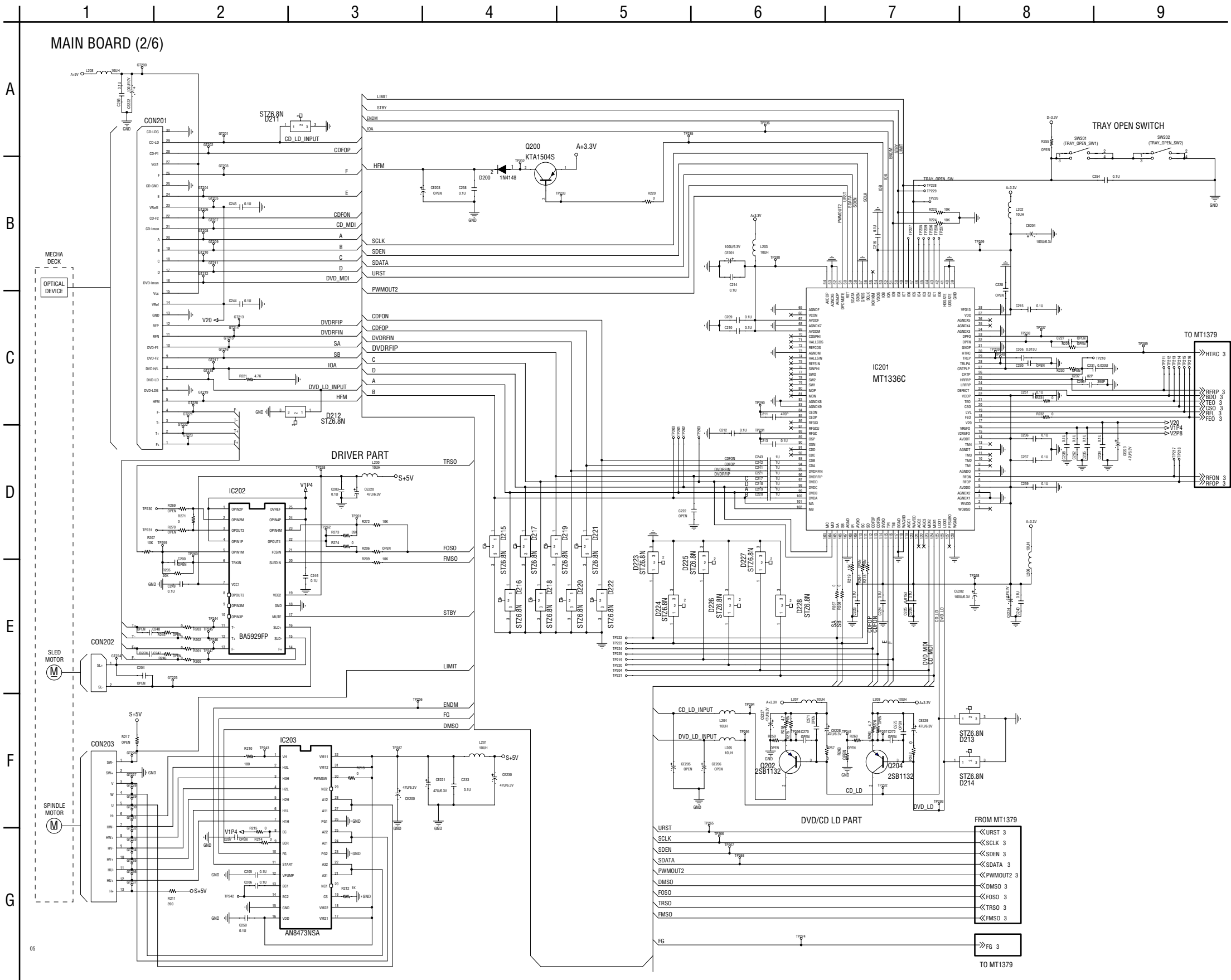
*VCOM ; Voltage applied to color filter substrate

SECTION 4 SCHEMATIC DIAGRAMS

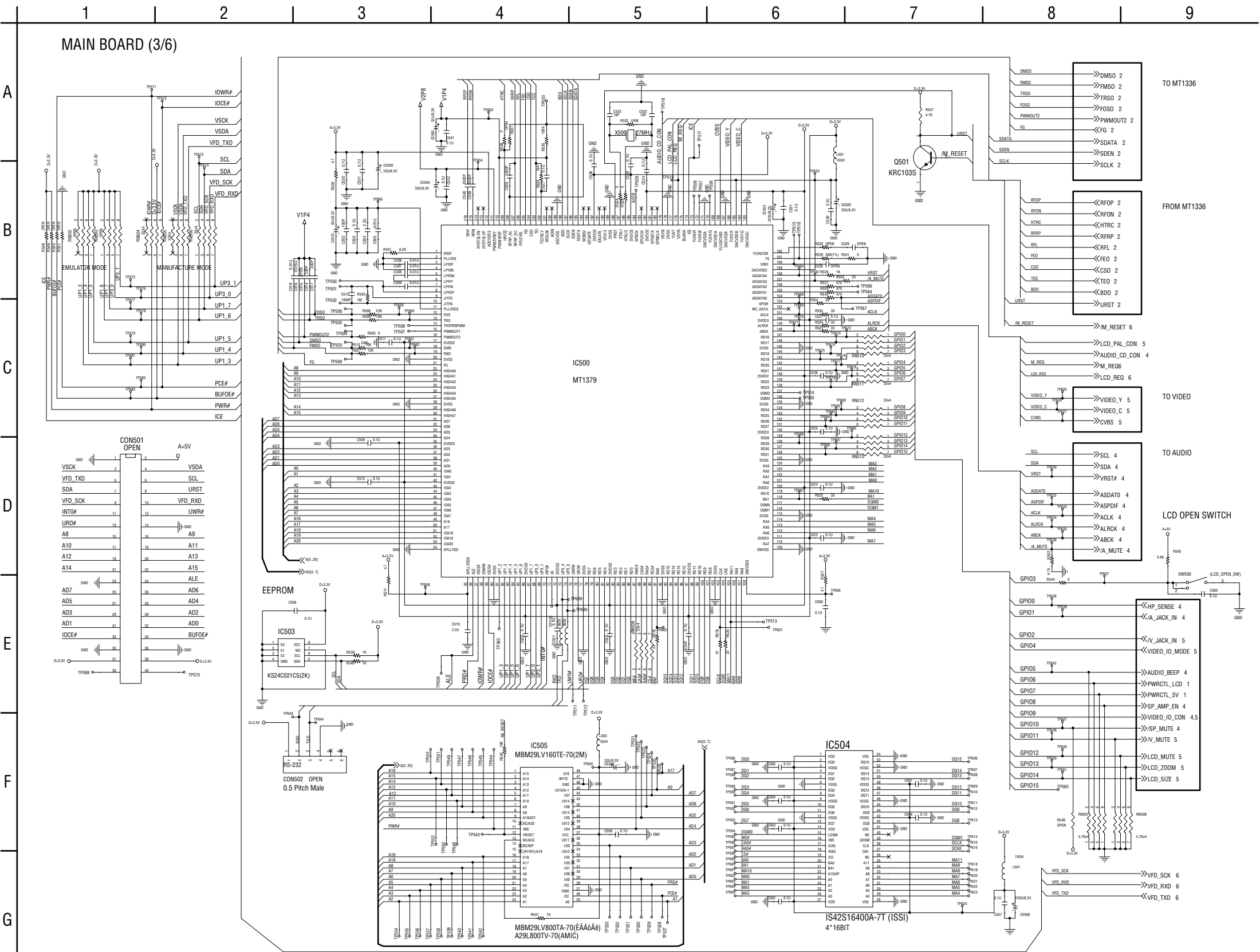
4-1. MAIN POWER



4-2. SERVO



4-3. MAIN (MTK1379)



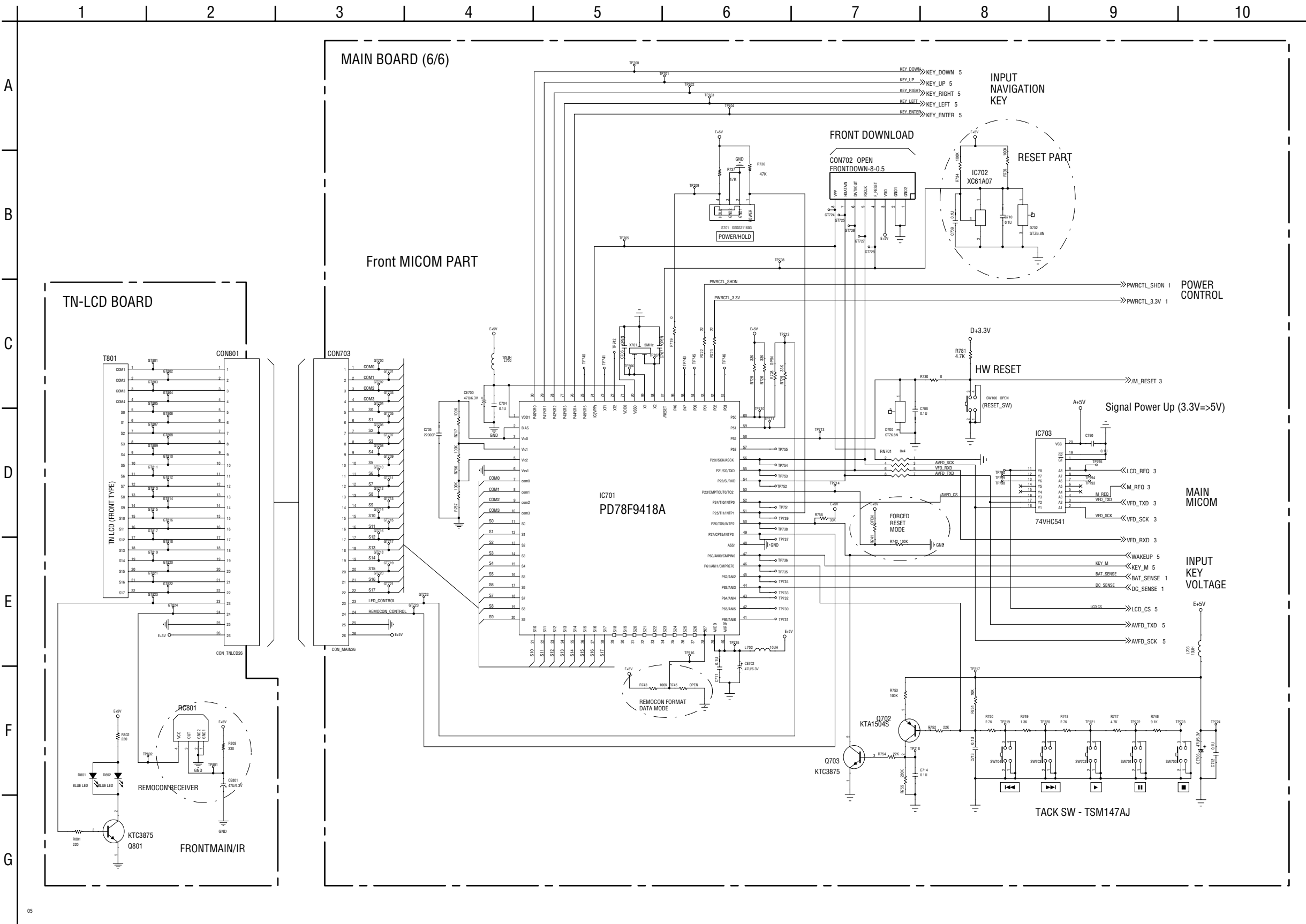
4-7



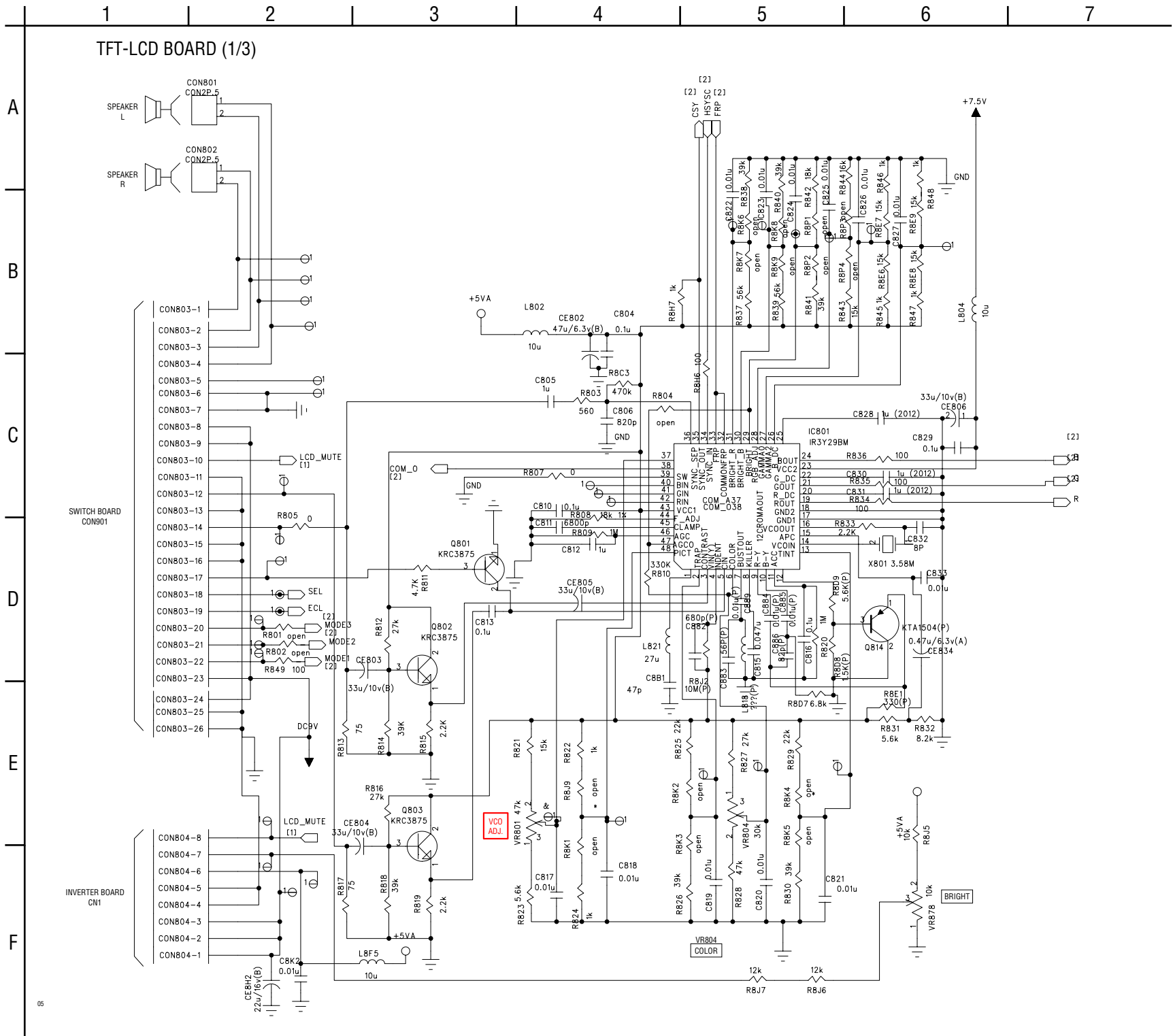
4-10



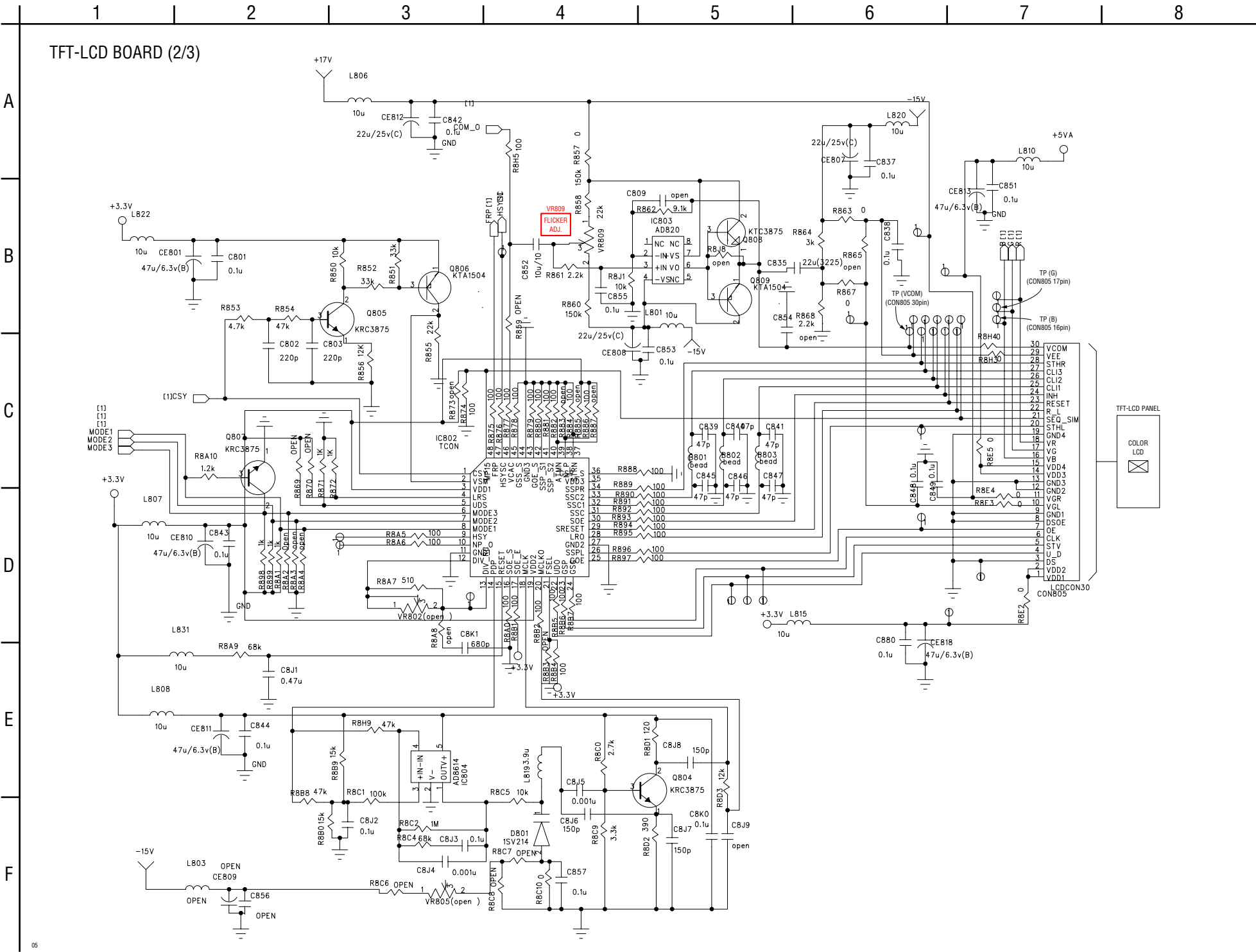
4-6. FRONT MAIN/IR



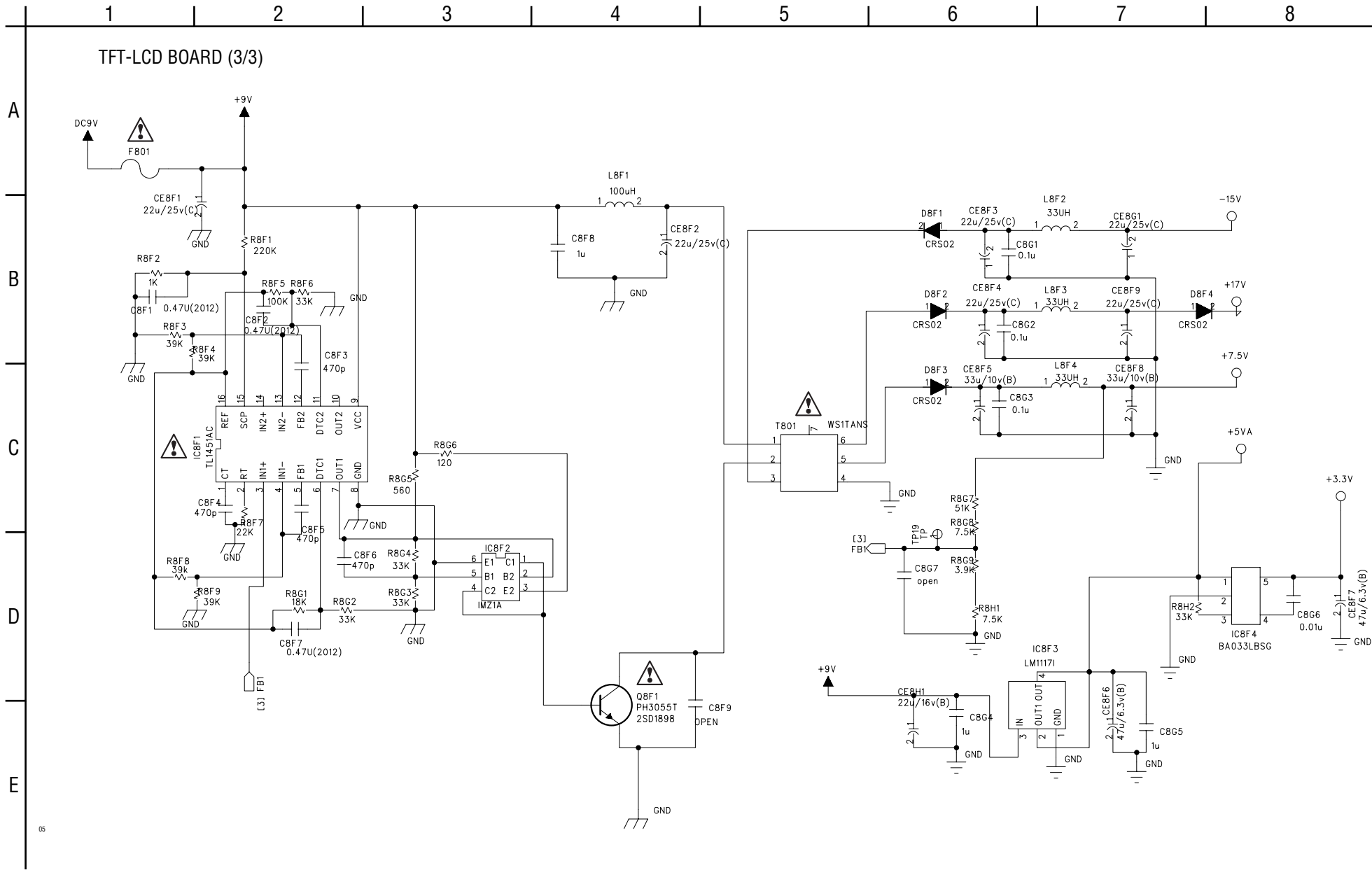
4-7. LCD (CHROMA)






4-8. LCD (CONTROL)



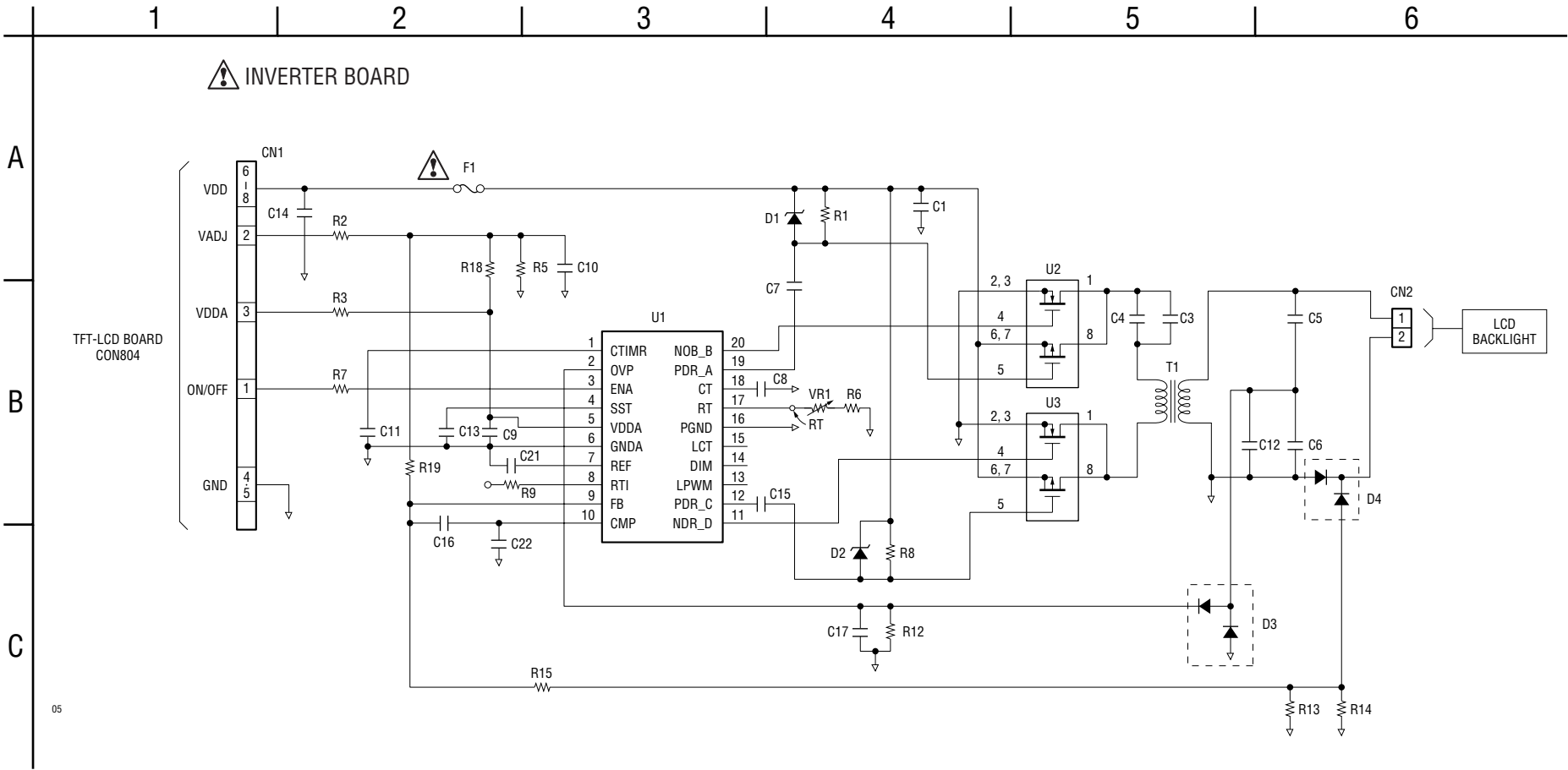
4-9. LCD (DC/DC CONV.)






The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

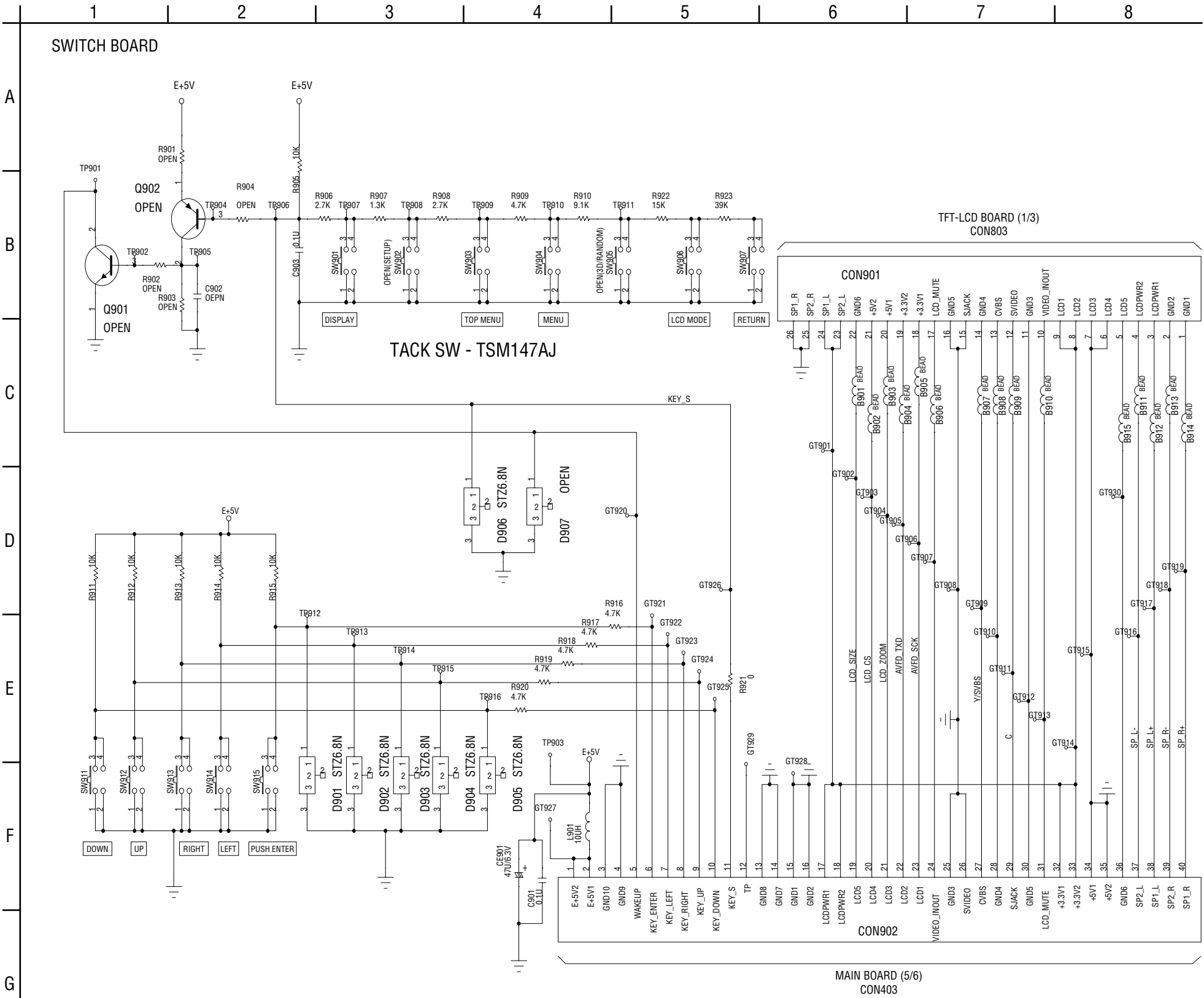
Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

4-10. INVERTER



The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
--	--

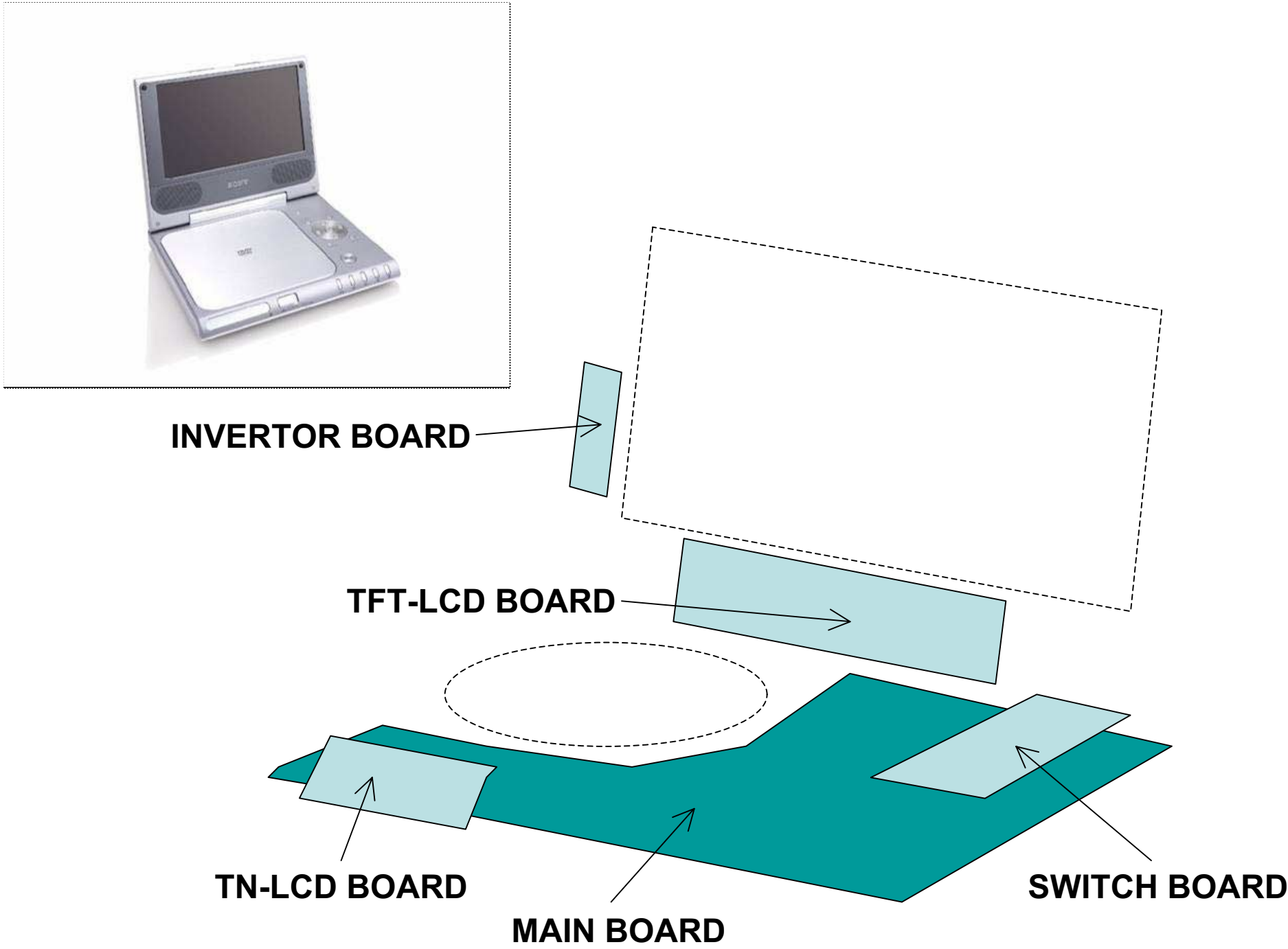
4-11. SWITCH



05

SECTION 5
PRINTED WIRING BOARDS

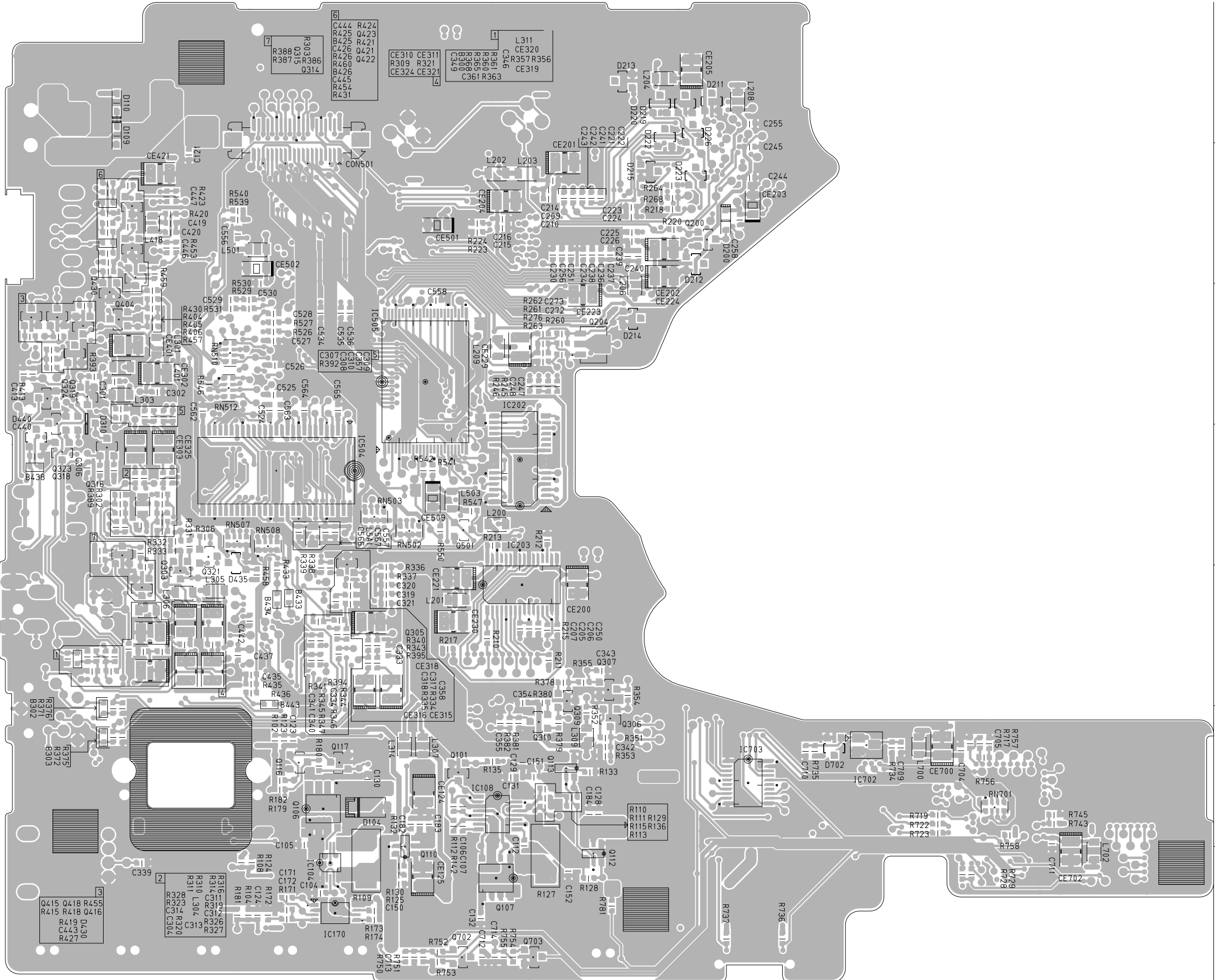
5-1. CIRCUIT BOARDS LOCATION



5-3

5-4

MAIN BOARD (BOTTOM)



MAIN BOARD (BOTTOM)

D104	F-7
D109	A-8
D110	A-8
D200	B-4
D211	A-4
D212	B-4
D213	A-5
D214	C-5
D215	B-5
D219	A-5
D220	A-5
D222	A-5
D223	B-4
D226	A-4
D310	C-8
D430	G-8
D435	E-7
D440	C-8
D702	F-3
IC104	G-7
IC108	F-6
IC170	G-7
IC202	C-5
IC203	D-5
IC504	D-7
IC505	C-6
IC702	F-3
IC703	F-4
Q101	F-6
Q106	F-7
Q107	G-6
Q110	G-6
Q112	G-5
Q113	F-5
Q116	F-7
Q117	F-7
Q200	B-4
Q204	C-5
Q303	E-8
Q305	E-6
Q306	F-5
Q307	E-5
Q309	F-5
Q310	F-5
Q314	A-7
Q315	A-7
Q316	D-8
Q318	D-8
Q319	C-8
Q321	E-8
Q323	D-8
Q324	C-8
Q404	C-8
Q415	G-8
Q416	G-8
Q418	G-8
Q421	A-7
Q423	A-7
Q430	C-8
Q501	D-6
Q702	G-6
Q703	G-5

05

8

7

6

5

4

3

2

1

A

B

C

D

E

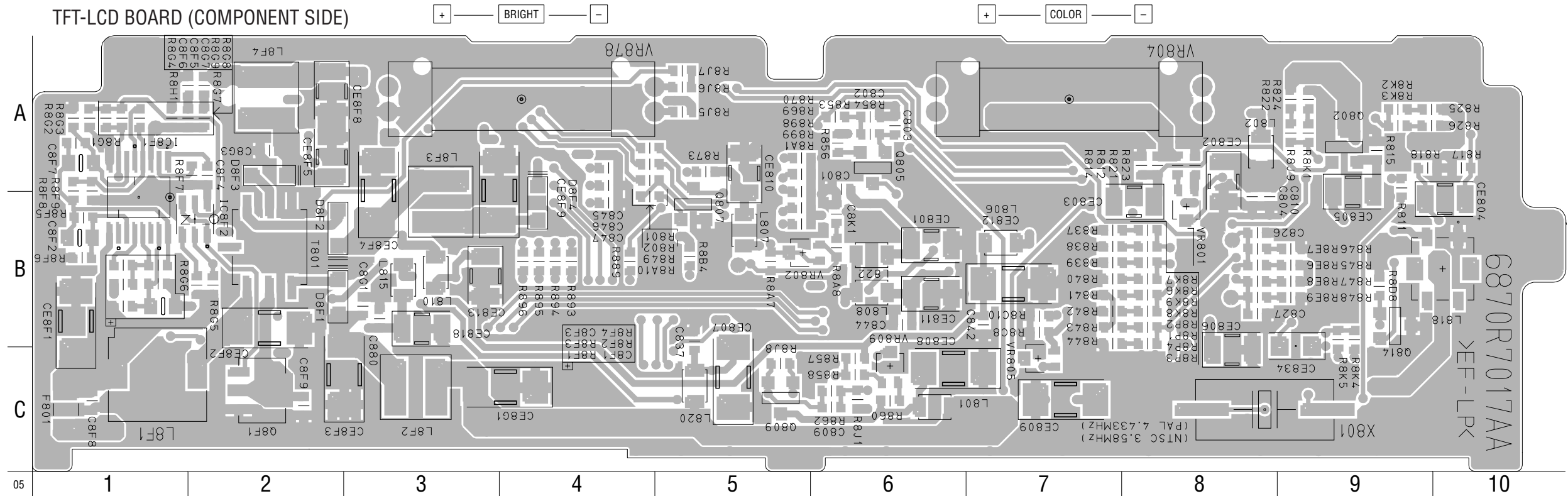
F

G

5-3. TFT-LCD BOARD

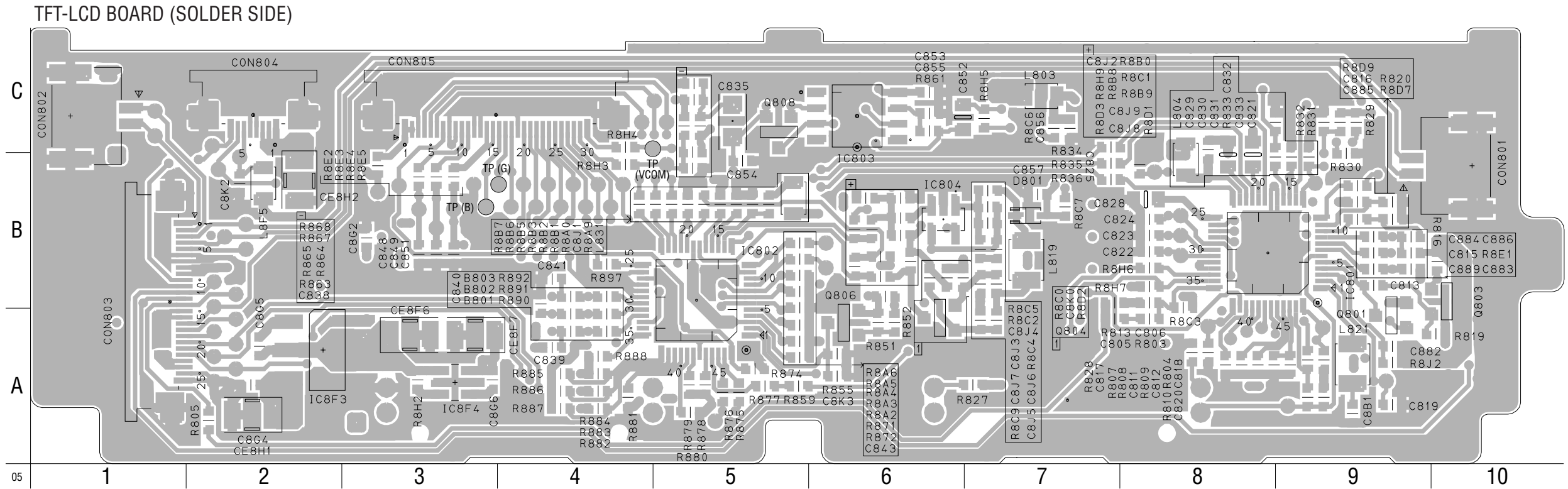
TFT-LCD BOARD (COMPONENT SIDE)

- | | |
|-------|-----|
| D8F1 | B-2 |
| D8F2 | B-2 |
| D8F3 | A-2 |
| D8F4 | D-4 |
| IC8F1 | A-1 |
| IC8F2 | B-2 |
| Q802 | A-9 |
| Q805 | A-6 |
| Q807 | B-5 |
| Q809 | C-5 |
| Q8F1 | C-2 |



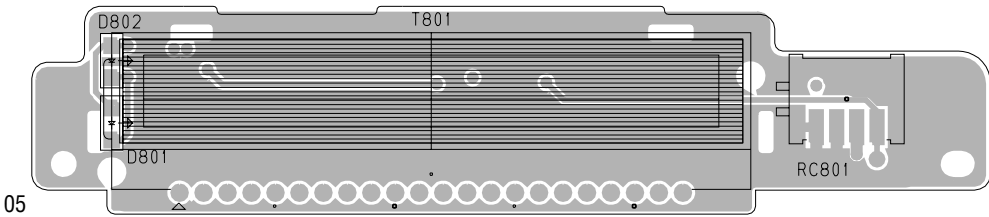
TFT-LCD BOARD (SOLDER SIDE)

- | | |
|--------|------|
| CON803 | A-1 |
| D801 | B-7 |
| IC801 | B-9 |
| IC802 | B-5 |
| IC803 | C-6 |
| IC804 | B-6 |
| IC8F3 | A-2 |
| IC8F4 | A-3 |
| Q801 | A-9 |
| Q803 | A-10 |
| Q804 | A-7 |
| Q806 | B-6 |
| Q808 | C-5 |
| Q809 | C-5 |

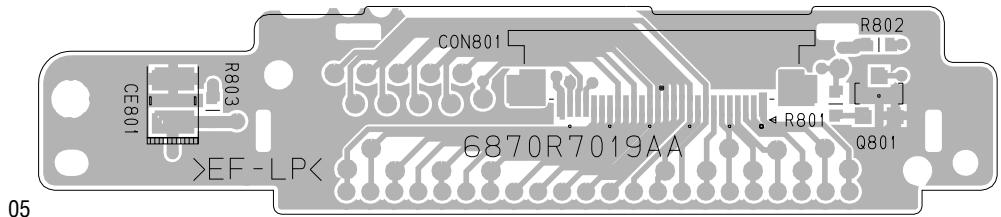


5-4. TN-LCD/INVERTER BOARDS

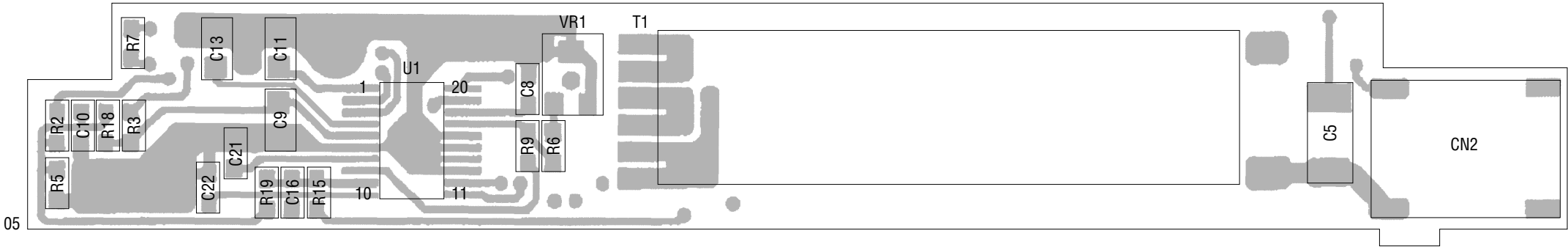
TN-LCD BOARD (TOP)



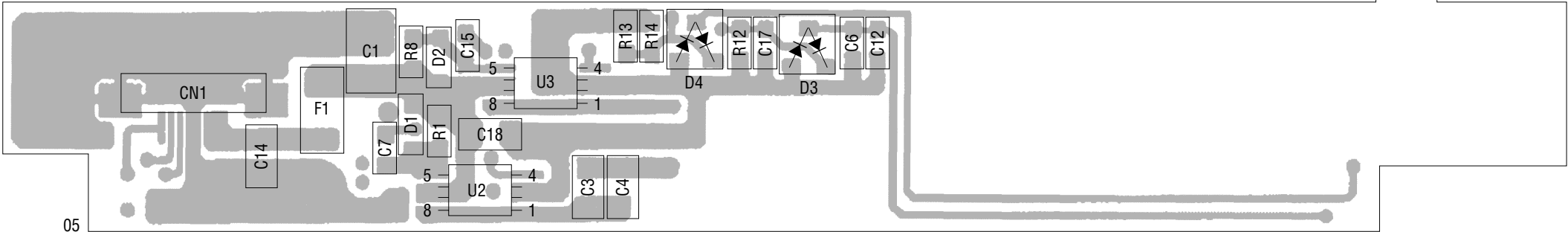
TN-LCD BOARD (BOTTOM)



INVERTER BOARD (SIDE A)

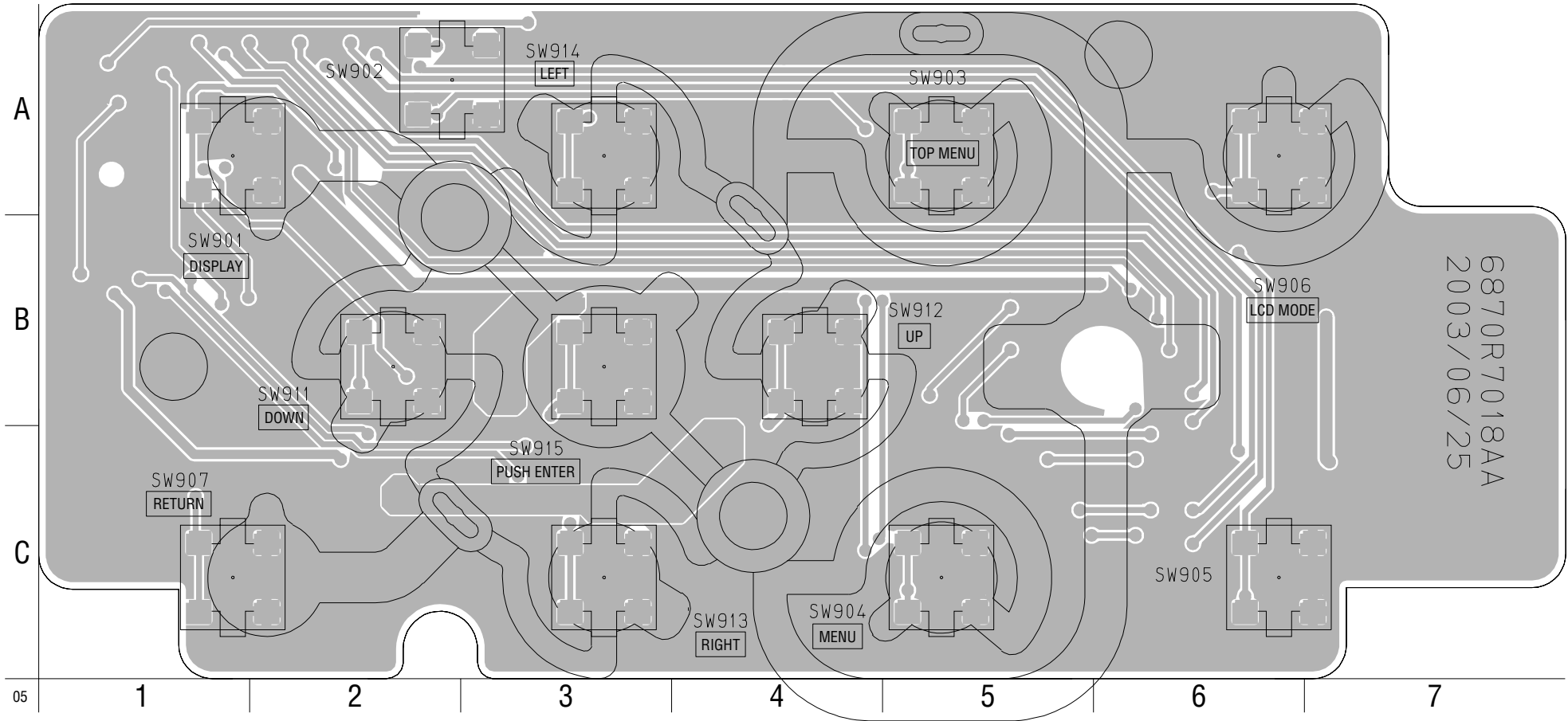


INVERTER BOARD (SIDE B)



5-5. SWITCH BOARD

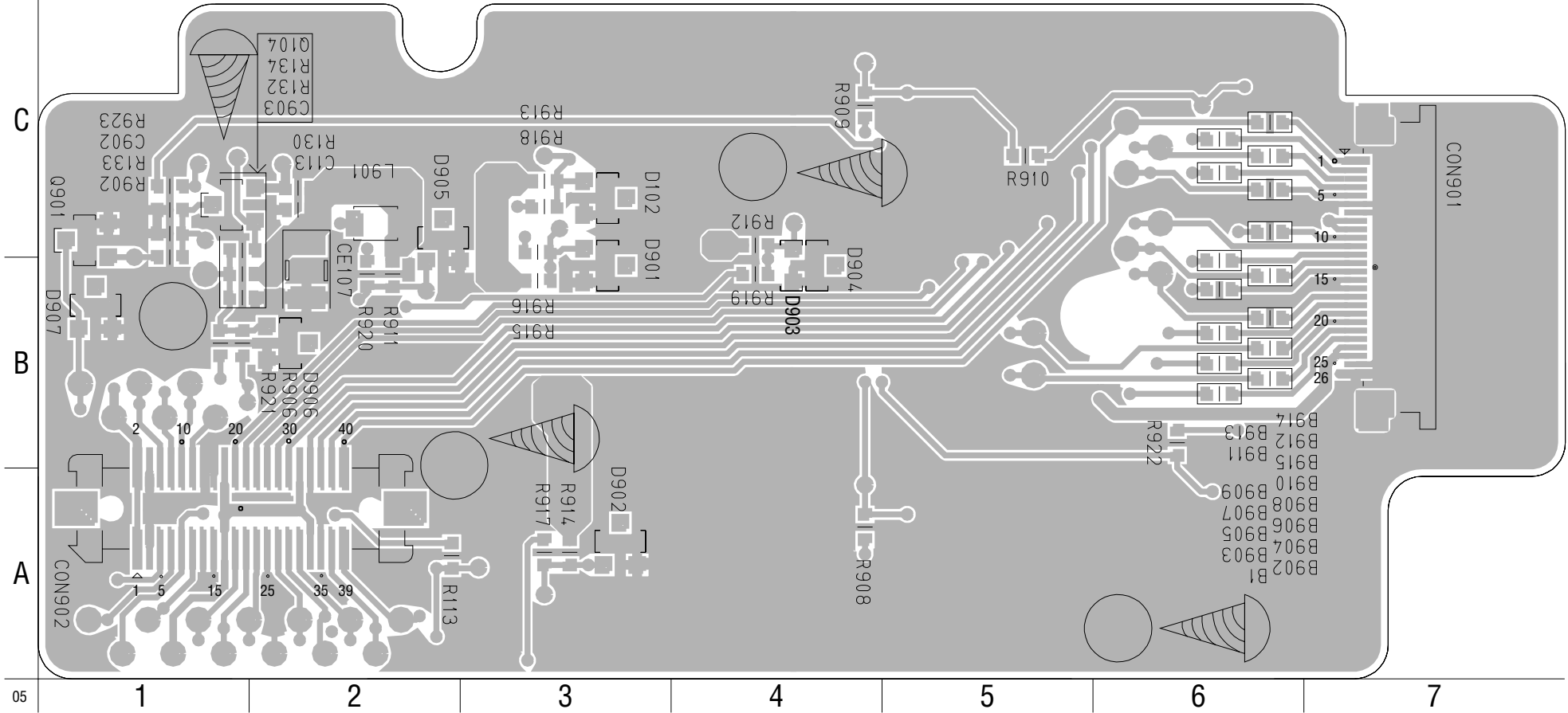
SWITCH BOARD (TOP)



SWITCH BOARD (BOTTOM)

- D901 B-3
- D902 A-3
- D903 B-4
- D904 B-4
- D905 C-2
- D906 B-2

SWITCH BOARD (BOTTOM)



SECTION 6 WAVEFORMS

6-1. DETAILS AND WAVEFORMS ON SYSTEM TEST AND DEBUGGING

1. SYSTEM 27MHz CLOCK,RESET,FLASH R/W SIGNAL

1) MT1379 main clock is at 27MHz(X501)

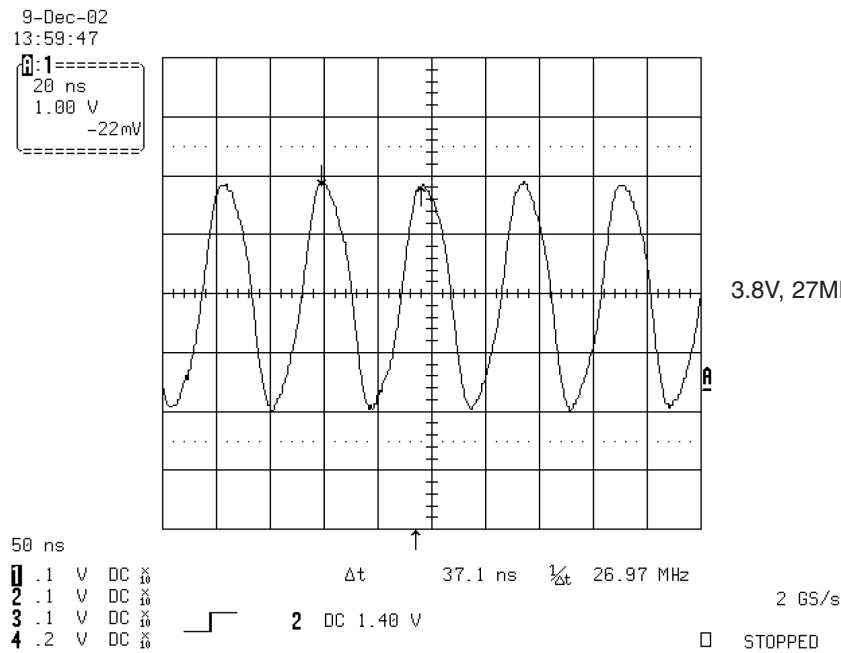


FIG 1-1

2) MT1379 & MT1336 reset is high active.

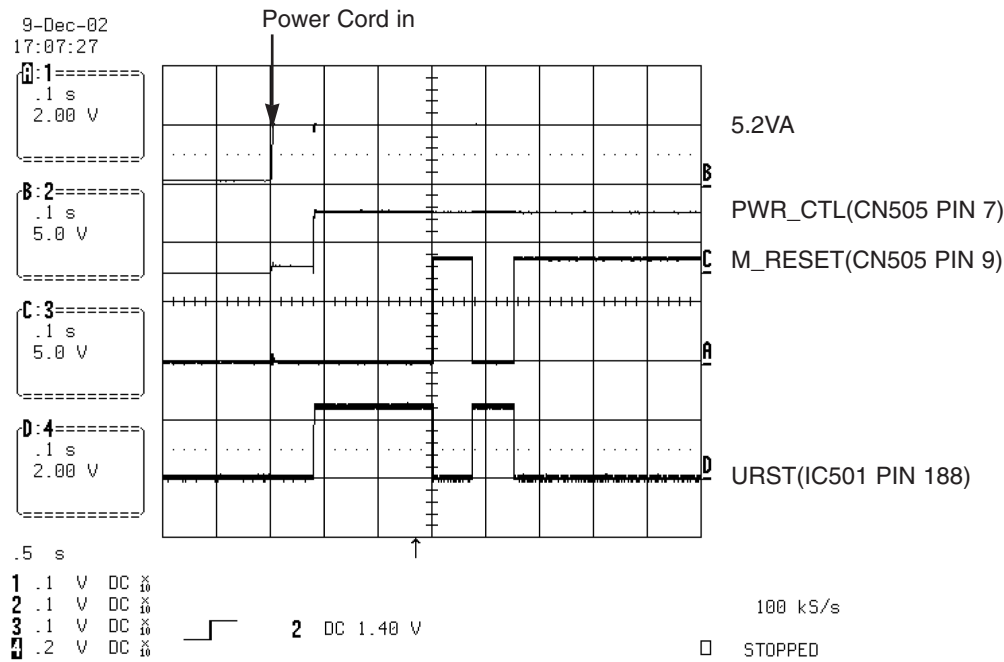


FIG 1-2

2. SDRAM CLOCK

1) MT1379 main clock is at 27MHz(X501)

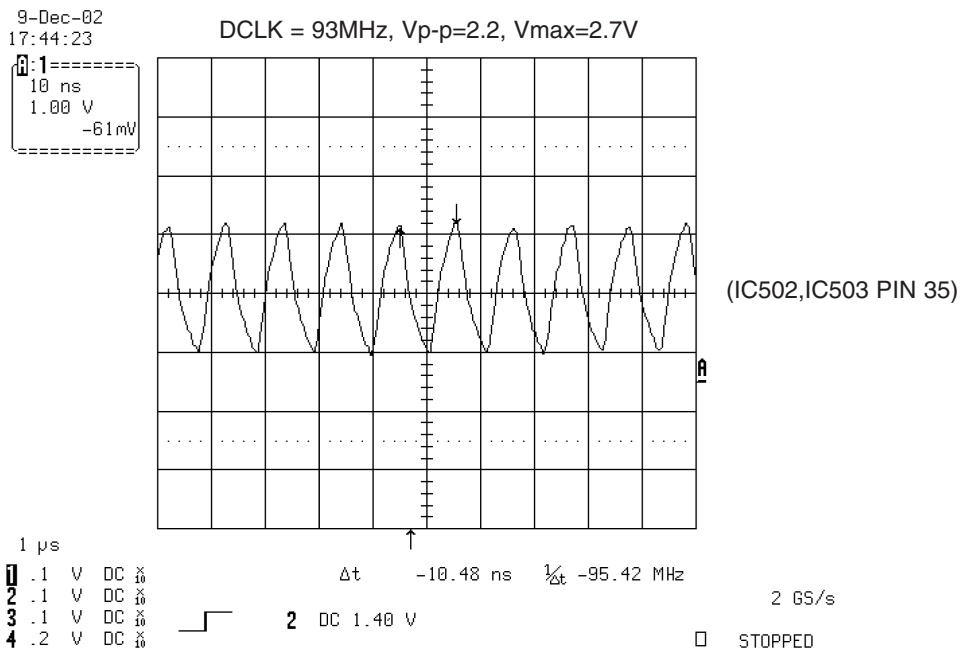


FIG 2-1

3. DISC TYPE JUDGEMENT WAVEFORM

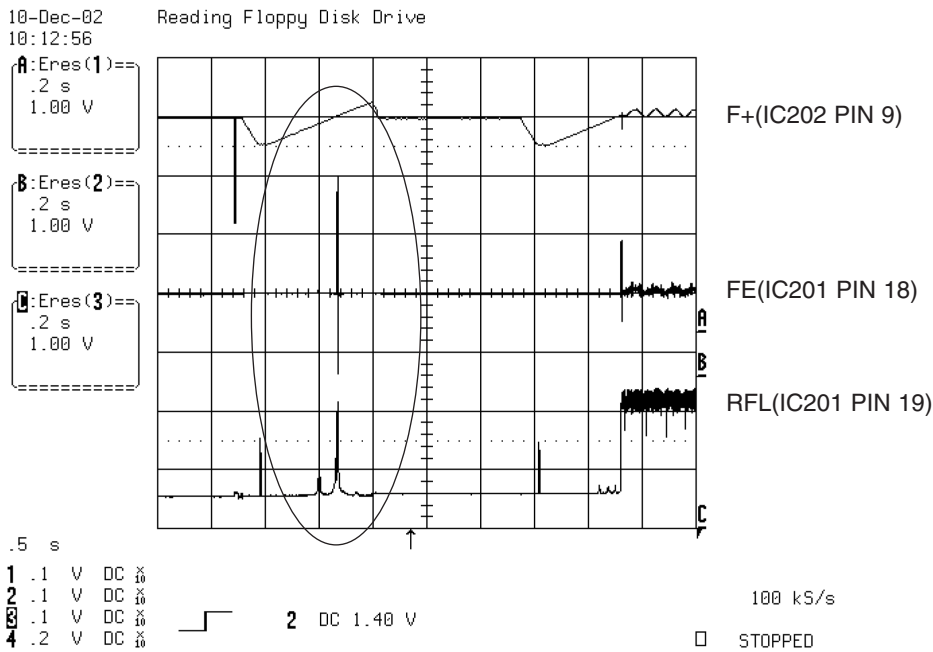


FIG 7-1 (DVD)

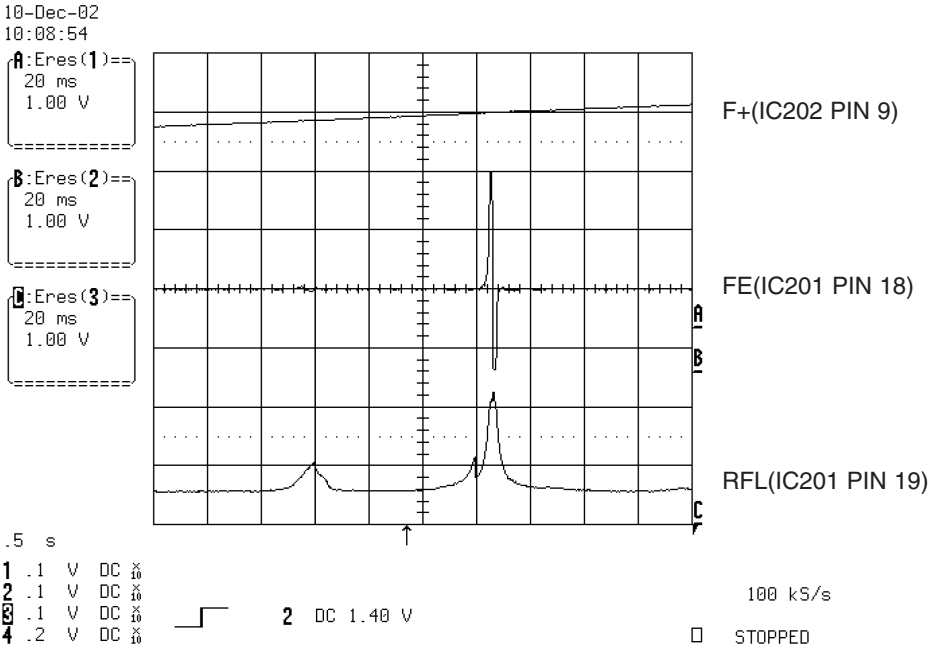


FIG 7-2 (DVD)

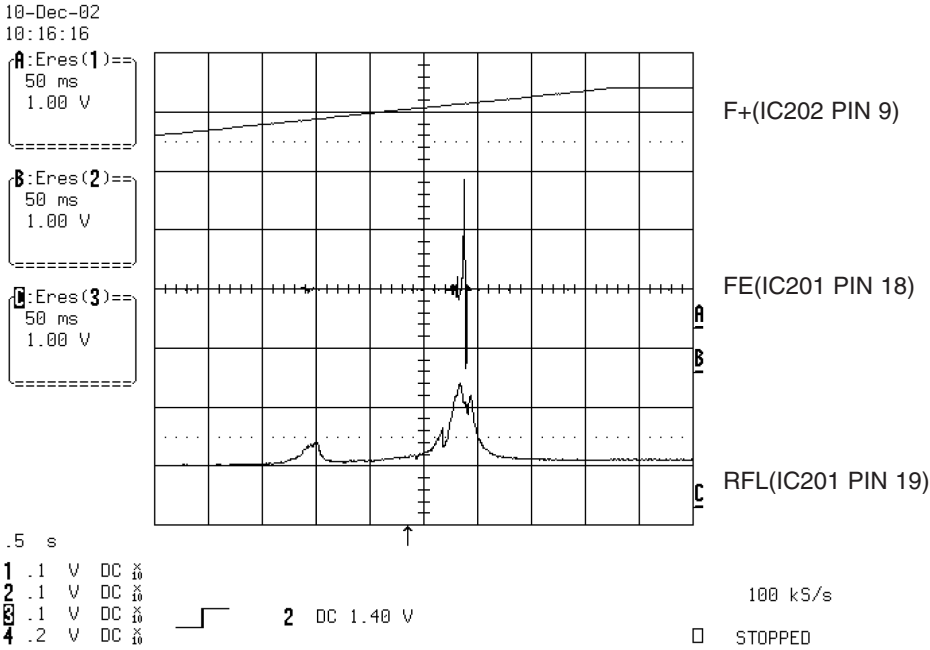


FIG 7-4 (CD)

4. FOCUS ON WAVEFORM

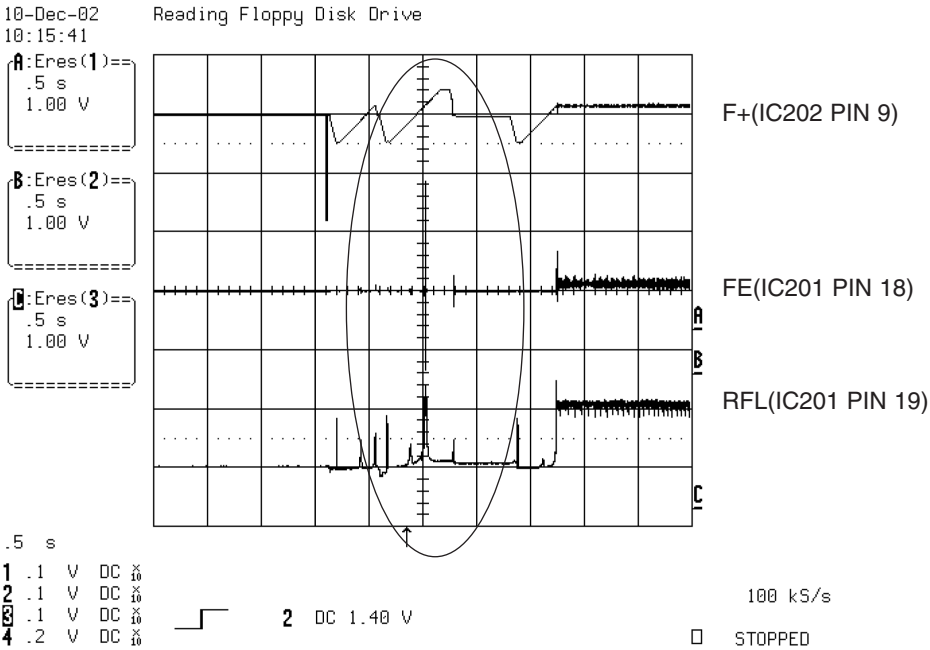


FIG 7-3 (CD)

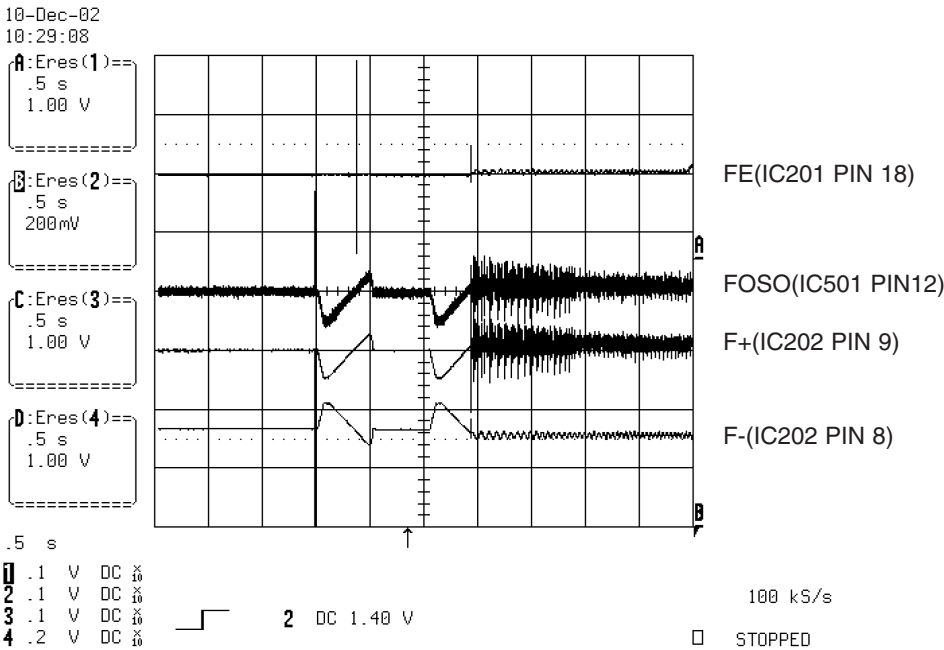


FIG 8-1 (DVD)

6. TRACKING CONTROL RELATED SIGNAL(System checking)

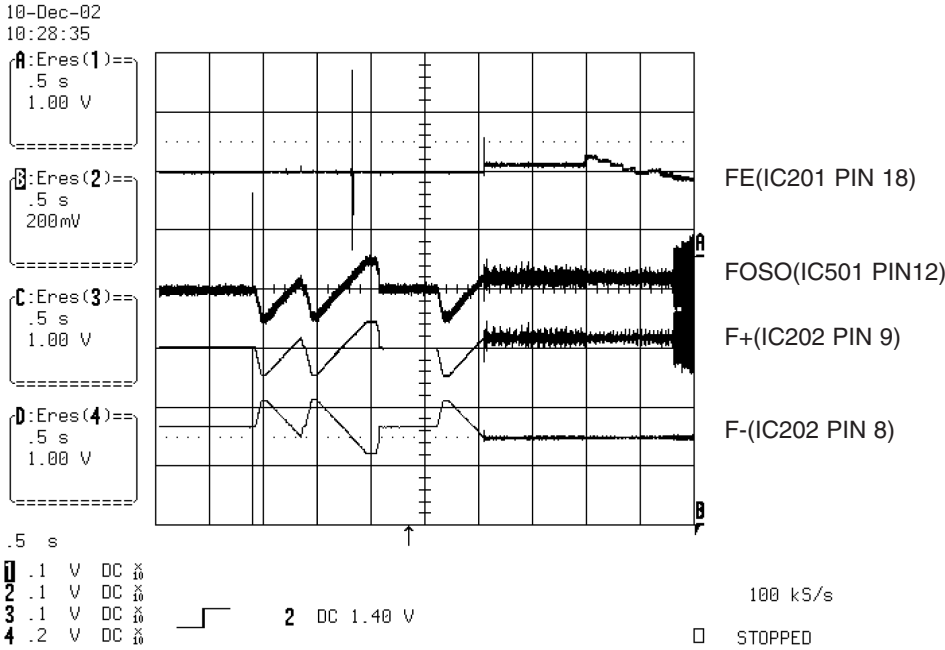


FIG 8-2 (CD)

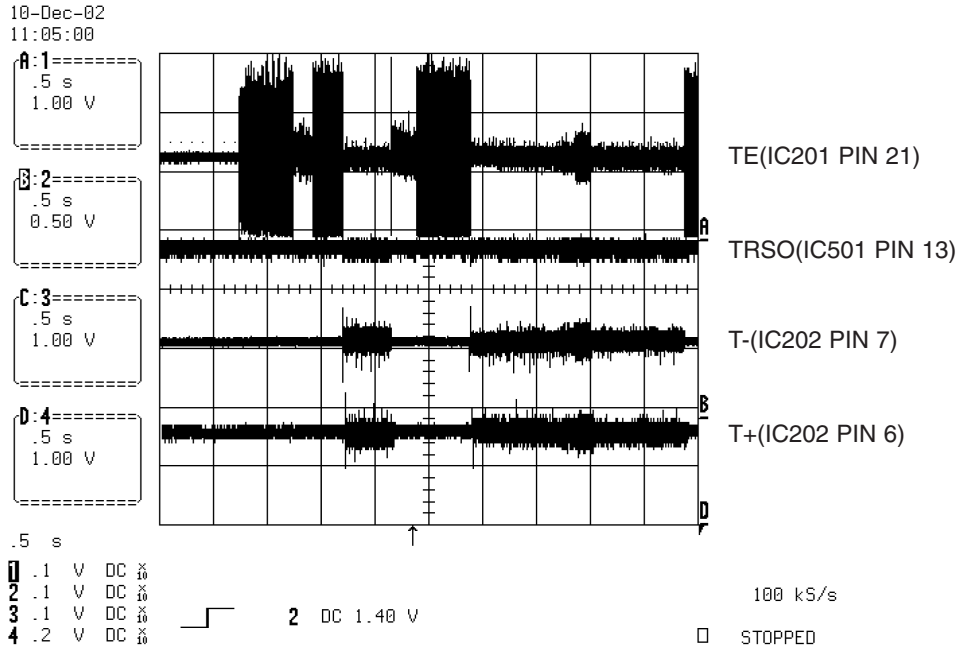


FIG 10-1(DVD)

5. SPINDLE CONTROL WAVEFORM (NO DISC CONDITION)

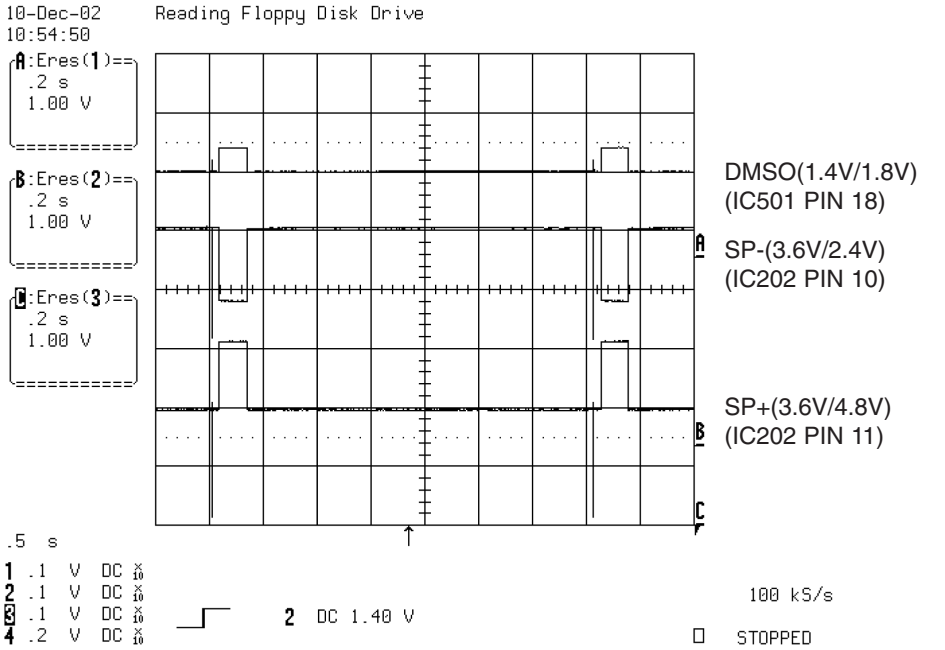


FIG 9-1

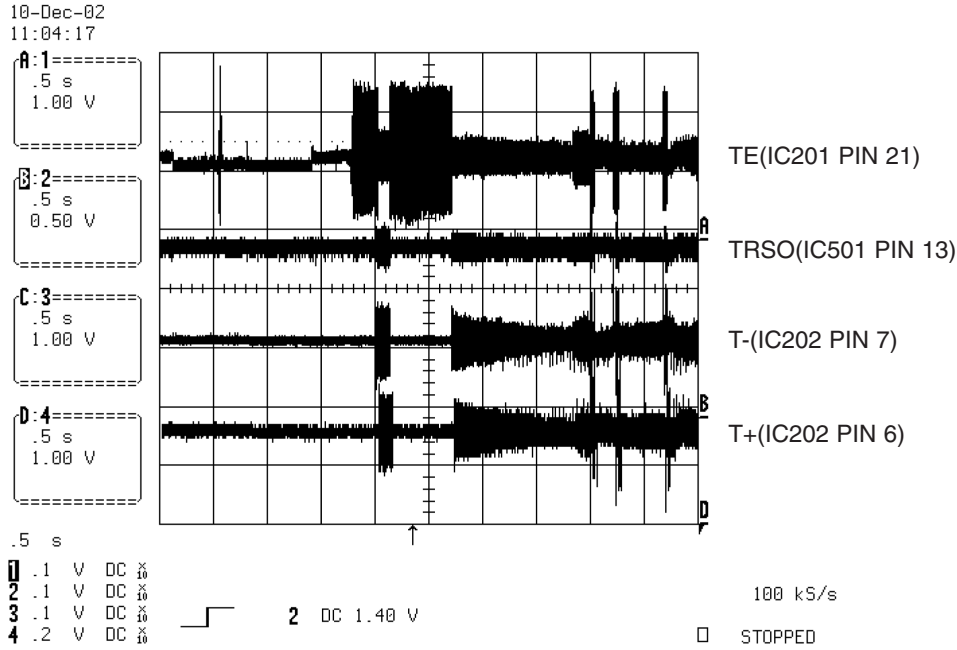


FIG 10-2(CD)

7. RF WAVEFORM

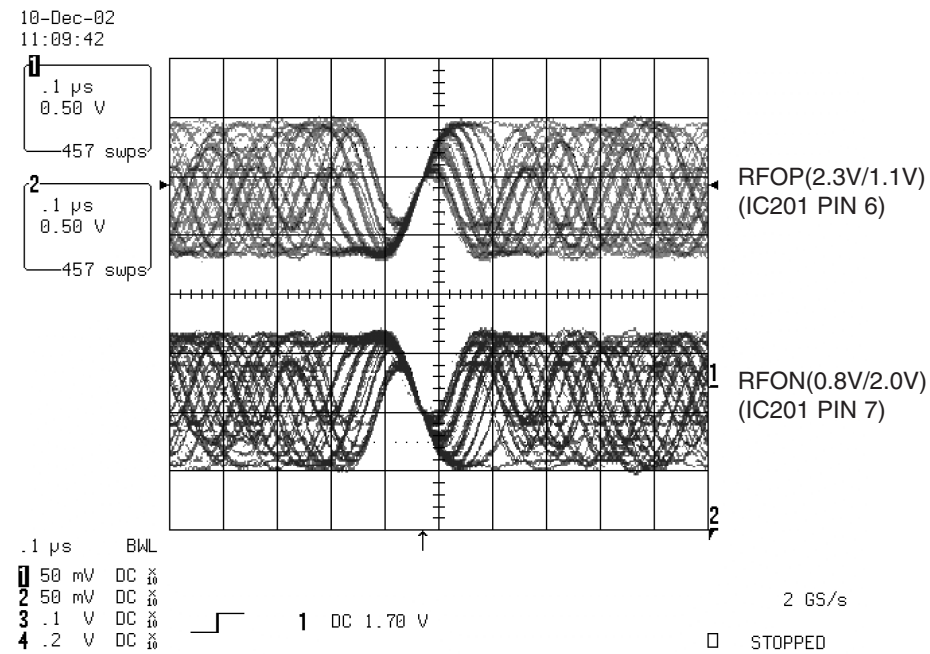


FIG 11-1

8. MT1379 AUDIO OPTICAL AND COAXIAL OUTPUT (ASPDIF)

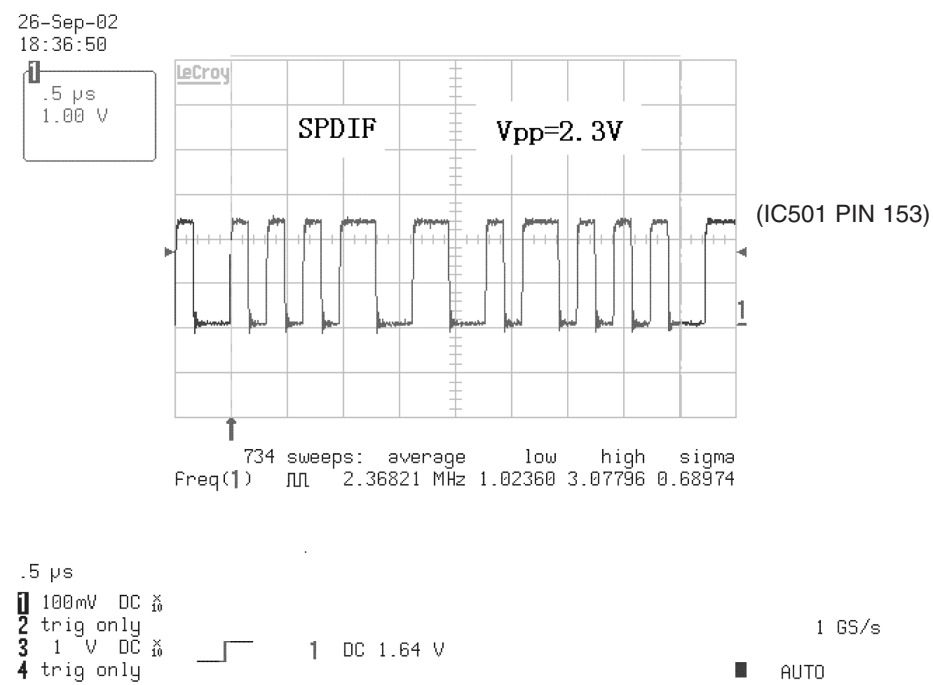


FIG 12-1

9. MT1379 VIDEO OUTPUT WAVEFORM

1) Full colorbar signal(CVBS)

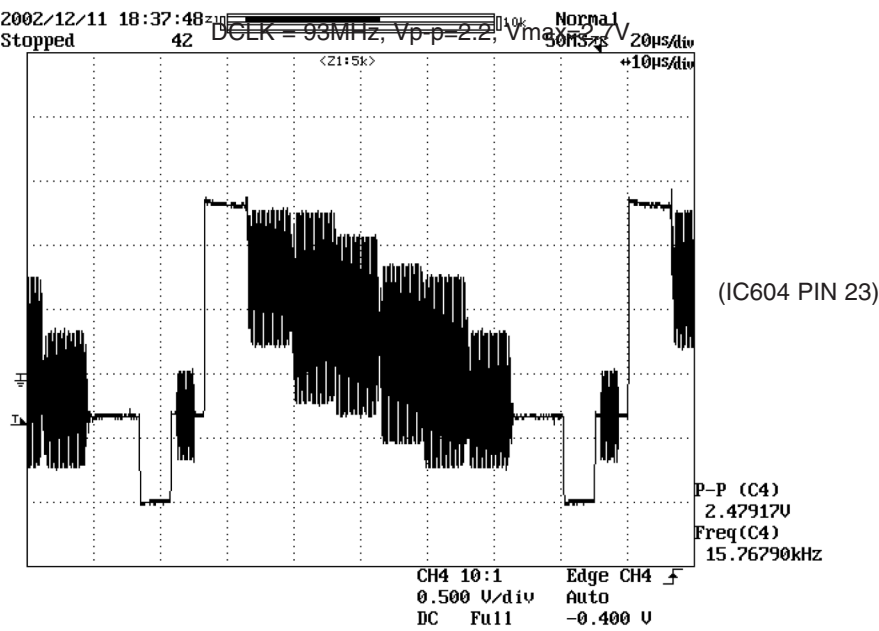


FIG 13-1

2) Y

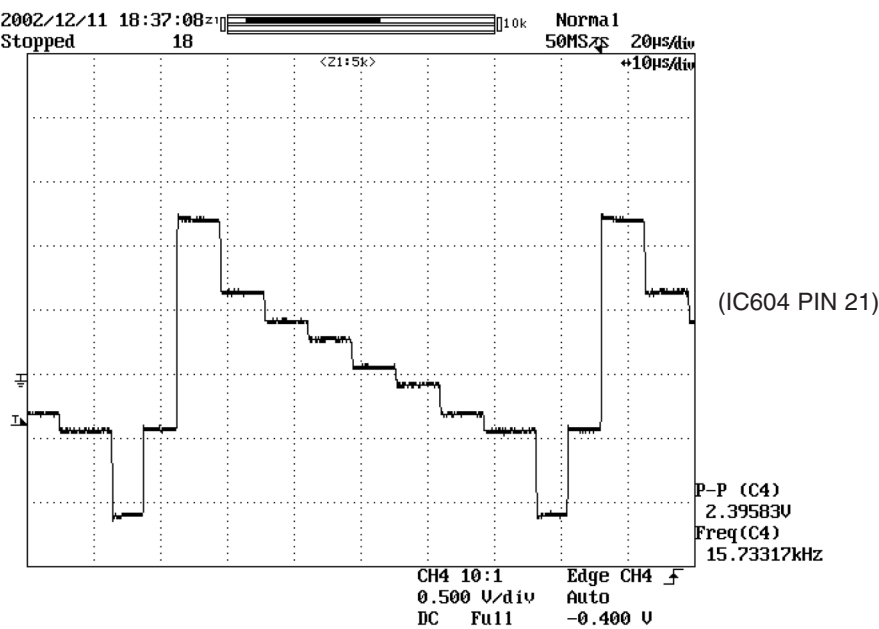


FIG 13-2

3) C

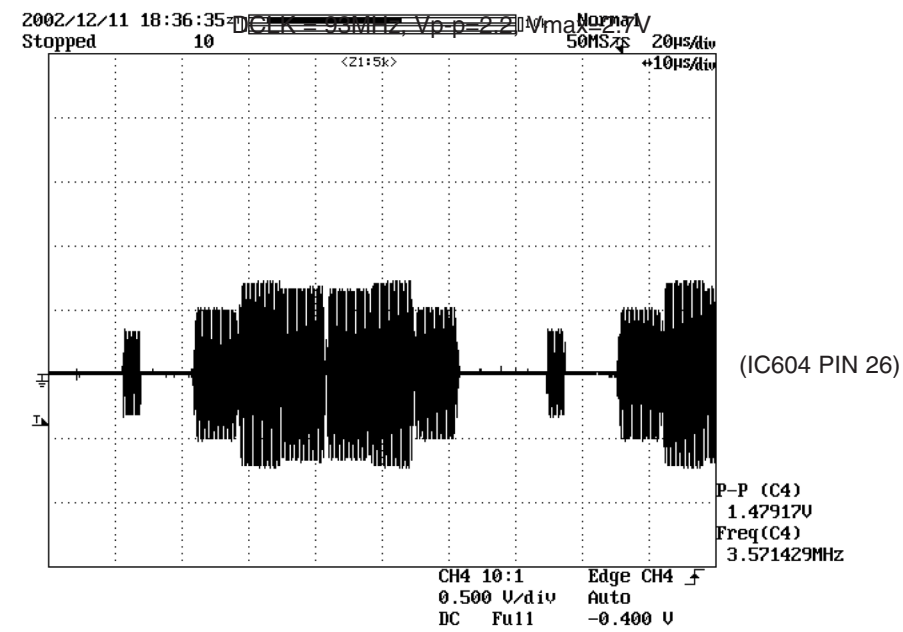


FIG 13-3

2) Audio related Signal

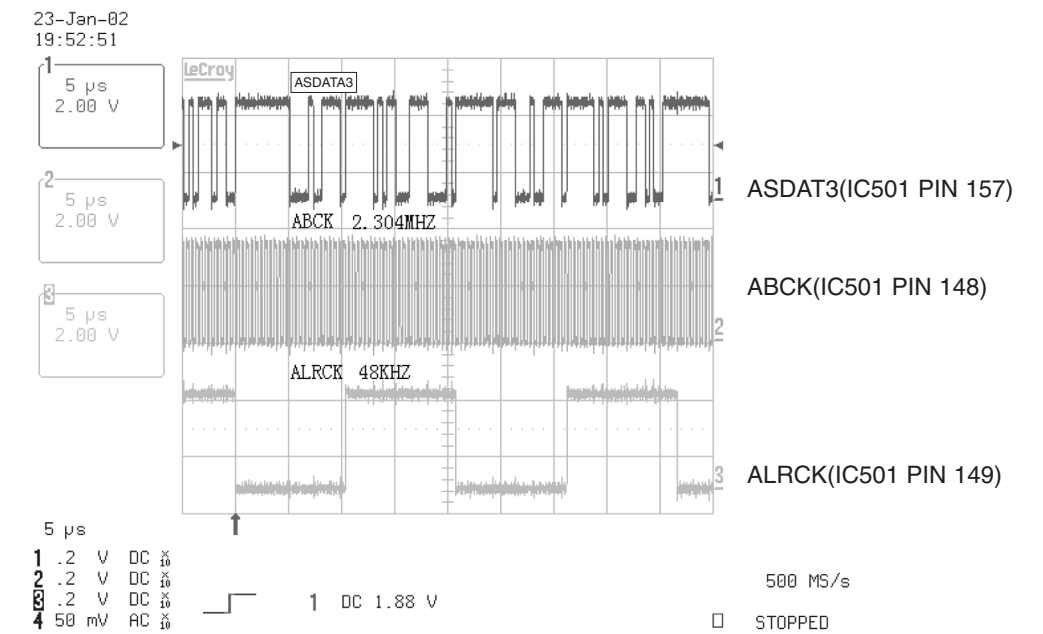


FIG 14-2

10. AUDIO OUTPUT FROM AUDIO DAC

1) Audio L/R

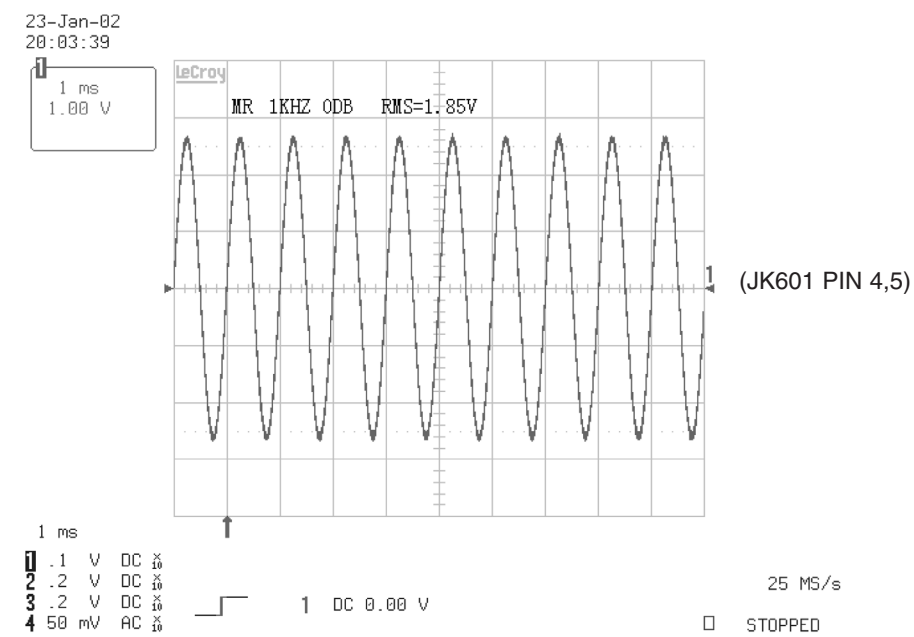


FIG 14-1

6-3. LCD VOLTAGE SHEET

IC801 IR3Y29BM

PIN NO	VOLT	WAVEFORM
1	2.5	Y signal(0.5)
2	3.1	
3	2.5	Y signal(0.5)
4	0.2	
5	2.8	C signal(0.5)
6	3.6	
7	3.5	
8	1	
9	2	
10	2	
11	2.1	
12	3	
13	3.2	
14	4.3	CLK(0.4)
15	2.6	
16	3	CLK(0.4)
17	0	
18	0	
19	4.4	R(0.6-4.4)
20	2.9	
21	4.4	G(0.6-4.4)
22	2.9	
23	7.5	VCC
24	4.4	B(0.6-4.4)
25	2.9	
26	2.5	
27	2.5	
28	2.5	
29	1.9	
30	2.5	
31	1.7	
32	2.6	HQ(0-2.6)
33	2.6	HQ(0-2.6)
34	3.4	SYNC(0-3.4)
35	3	C.SYNC
36	2.4	Y signal(0.5)
37	2.1	
38	4.7	COM(3-4.7)
39	0	
40	2	
41	2	
42	2	
43	5	VCC
44	1.3	
45	2.7	
46	2.9	
47	3.2	
48	2.7	

PIN NO	VOLT	WAVEFORM
1	0	
2	3.3	HD(0-3.3)
3	0	
4	0	
5	3.3	VD(0-3.3)
6	2.8	HQ-OUT
7	2.8	
8	0	
9	3.2	
10	0	
11	0	
12	0	
13	2.7	
14	2.8	0-2.8
15	0	
16	2.6	0-2.6
17	2.6	0-2.6
18	2.6	0-2.6
19	2.6	0-2.6
20	0	
21	2.6	0-2.6
22	0	
23	2.6	0-2.6
24	2.6	0-2.6
25	2.6	CLK 0-2.6
26	0	
27	2.6	CLK 0-2.6
28	0	
29	2.6	CLK 0-2.6
30	3.3	VCC
31	0	
32	3.3	VCC
33	1.6	
34	3.3	VCC
35	3.3	VCC
36	3.3	VCC
37	2.6	VCC
38	0	
39	2.2	
40	3.3	
41	0	
42	3.3	
43	3.3	
44	0	
45	0	
46	0	
47	3.3	
48	0	

SECTION 7

IC PIN FUNCTION DESCRIPTION

7-1. SYSTEM CONTROL PIN FUNCTION (MAIN BOARD IC500: MT1379)

Pin No.	Pin Name	I/O	Function
1	EREF	I	Current reference input. It generates reference current for data PLL.
2	PLL VSS	–	Ground pin for PLL and related analog circuitry.
3	LPIOP	O	Positive output of the low pass filter
4	LPION	O	Negative output of the low pass filter.
5	LPFON	O	Negative output of loop filter amplifier
6	LPFIP	I	Positive input of loop filter amplifier
7	LPFIN	I	Negative input of loop filter amplifier
8	LPFOP	O	Positive output of loop filter amplifier
9	JITFO	O	RF jitter meter output
10	JITFN	I	Negative input of the operation amplifier for RF jitter meter
11	PLLVDD3	–	A+3.3v
12	FOSO	O	Focus servo output.
13	TRSO	O	Tracking servo output.
14	TROPENPWM	O	nc
15	PWMOUT1	O	nc
16	PWMOUT2	O	DPD mute control(PWM)
17	DVDD2	–	D+2.5v
18	DMSO	O	Spindle motor control output.(PWM)
19	FMSO	O	Sled motor control (PWM)
20	DVSS	–	Ground pin
21	FG	I	Spindle motor Hall sensor input.
22	A8	I/O	FROM address 8
23	A9	I/O	FROM address 9
24	A10	I/O	FROM address 10
25	A11	I/O	FROM address 11
26	A12	I/O	FROM address 12
27	A13	I/O	FROM address 13
28	DVSS	–	Ground pin
29	A14	I/O	FROM address 14
30	A15	I/O	FROM address 15
31	AD7	I/O	FROM data 7
32	AD6	I/O	FROM data 6
33	AD5	I/O	FROM data 5
34	AD4	I/O	FROM data 4
35	DVDD3	–	D+3.3v
36	AD3	I/O	FROM data 3
37	AD2	I/O	FROM data 2
38	AD1	I/O	FROM data 1
39	AD0	I/O	FROM data 0
40	A0	I/O	FROM address 0
41	A1	I/O	FROM address 1
42	DVDD2	–	D+2.5v
43	A2	I/O	FROM address 2
44	A3	I/O	FROM address 3
45	A4	I/O	FROM address 4
46	A5	I/O	FROM address 5
47	A6	I/O	FROM address 6

Pin No.	Pin Name	I/O	Function
48	A7	I/O	FROM address 7
49	A16	O	FROM address 16
50	A17	O	FROM address 17
51	A18	I/O	FROM address 18
52	A19	I/O	FROM address 19
53	A20	I/O	FROM address 20
54	APLLVSS	–	Ground pin
55	APLLVDD3	–	A+3.3v
56	ALE	I/O	Microcontroller address latch enable.
57	PRD#	O	FROM output enable, active low
58	IOWR#	O	FROM write enable, active low
59	IOCE#	O	FROM chip select, active low
60	DVSS	–	Ground pin.
61	UP1_2	I/O	Microcontroller port 1-2
62	UP1_3	I/O	VSCK (MANUFACTURE mode select)
63	UP1_4	I/O	VSDA (MANUFACTURE mode select)
64	UP1_5	I	Front maicroserial TXD (MANUFACTURE mode select)
65	UP1_6	I/O	SCL (MANUFACTURE mode select)
66	DVDD3	–	D+3.3v
67	UP1_7	I/O	SDA (MANUFACTURE mode select)
68	UP3_0	O	Front maicroserial clock (MANUFACTURE mode select)
69	UP3_1	O	Front maicroserial RXD (MANUFACTURE mode select)
70	INT0#	I/O	Microcontroller interrupt 0, active low.
71	IR	I	nc
72	DVDD2	–	D+2.5v
73	RXD	I/O	nc(RS232C)
74	TXD	I/O	nc(RS232C)
75	UWR#	I/O	Microcontroller write strobe, active low.
76	URD#	I/O	Microcontroller read strobe, active low.
77	DVSS	–	Ground pin.
78	DQ7	I/O	DRAM data 7
79	DQ6	I/O	DRAM data 6
80	DQ5	I/O	DRAM data 5
81	DQ4	I/O	DRAM data 4
82	DVDD2	–	D+2.5v
83	DQ3	I/O	DRAM data 3
84	DQ2	I/O	DRAM data 2
85	DQ1	I/O	DRAM data 1
86	DQ0	I/O	DRAM data 0
87	WE#	O	DRAM Write enable, active low.
88	CAS#	O	DRAM columnaddress strobe, active low.
89	RAS#	O	DRAM row address strobe, active low.
90	CS#	O	DRAM chip select, active low.
91	BA0	O	DRAM bank address 0
92	DVSS	–	Ground pin.
93	DQ15	I/O	DRAM data 15
94	DQ14	I/O	DRAM data 14

Pin No.	Pin Name	I/O	Function
95	DQ13	I/O	DRAM data 13
96	DQ12	I/O	DRAM data 12
97	DVDD3	–	D+3.3v
98	DQ11	I/O	DRAM data 11
99	DQ10	I/O	DRAM data 10
100	DQ9	I/O	DRAM data 9
101	DQ8	I/O	DRAM data 8
102	DVSS	–	Ground pin
103	DCLK	O	DRAM clock
104	DCKE	O	DRAM clock enable
105	MA11	O	DRAM address 11
106	MA9	O	DRAM address 9
107	MA8	O	DRAM address 8
108	DMVDD3	–	A+3.3v
109	DVMSS	–	Ground pin
110	MA7	O	DRAM address 7
111	DVDD3	–	D+3.3v
112	MA6	O	DRAM address 6
113	MA5	O	DRAM address 5
114	MA4	O	DRAM address 4
115	DVSS	–	Ground pin
116	DQM1	O	Mask for DRAM input
117	DQM0	O	Mask for DRAM input
118	BA1	O	DRAM bank address 0
119	MA10	O	DRAM address 10
120	DVDD2	–	D+2.5v
121	MA0	O	DRAM address 0
122	MA1	O	DRAM address 1
123	MA2	O	DRAM address 2
124	MA3	O	DRAM address 3
125	DVSS	–	Ground pin
126	GPIO15	I/O	nc
127	GPIO14	O	LCD Sizes control
128	GPIO13	O	LCD Zoom control
129	GPIO12	O	LCD Mute control
130	DVDD3	–	D+3.3v
131	DPIO11	O	S terminal mute control.
132	GPIO10	O	Speaker amplifier mute control
133	GPIO9	O	Video IN/OUT change control .
134	GPIO8	O	Speaker L/R mix control
135	DVSS	–	Ground pin
136	DQM3	O	nc
137	DQM2	O	nc
138	GPIO7	O	5v power supply control
139	GPIO6	O	LCD power supply control
140	DVDD2	–	D+2.5v
141	GPIO5	O	Audio amplifier BEEP control

Pin No.	Pin Name	I/O	Function
142	GPIO4	I	LINE IN/OUT selection input
143	GPIO3	I	LCD OPEN Switch input
144	GPIO2	I	Video Jack detection input
145	DVSS	–	Ground pin
146	GPIO1	I	Audio Jack detection input
147	GPIO0	I	Headphone Jack detection input
148	ABCK	O	Audio serial clock
149	ALRCK	O	Audio left/right channel clock
150	DVDD3	–	D+3.3v
151	ACLK	I	Audio DAC master clock
152	MC_DATA	I	nc
153	ASPDIF	O	SPDIF output
154	ASDAT0	O	Audio serial data0(left/right channel)
155	ASDATA1	I/O	nc
156	ASDATA2	I/O	nc
157	/A_MUTE	O	LINE, Headphone audio mute
158	VRST	O	DAC reset control
159	DACVDDC	–	D+3.3v
160	VREF	I	Bandgap reference voltage
161	FS	O	Full scale adjustment
162	YUV0/CIN	O	nc
163	DACVSSC	–	Ground pin
164	VIDEO_C	O	Analog chroma output
165	DACVddb	–	D+3.3v
166	VIDEO_Y	O	Analog Y output
167	DACVSSB	–	Ground pin
168	CVBS	O	Analog composite output
169	DACVDDA	–	D+3.3v
170	YUV4/G	O	nc
171	DACVSSA	–	Ground pin
172	YUV5/B	O	nc
173	YUV6/R	O	nc
174	ICE	I	nc (MANUFACTURE mode select)
175	M_REC	O	Front maicro controller chip select
176	LCD_REQ	O	LCD, chip select
177	LCD_PAL_CON	O	LCD, PAL control
178	DVSS	–	Ground pin
179	AUDIO_CD_CON	O	Audio Multiplexer control
180	SPMCLK	I	nc
181	SPDATA	I	nc
182	DVDD2	–	D+2.5v
183	SPLRCK	I	nc
184	SPBCK	I	nc
185	DVDD3	–	D+3.3v
186	XTALO	O	Crystal output
187	XTALI	I	Crystal input
188	URST	I	Power on reset input, active high

Pin No.	Pin Name	I/O	Function
189	DVSS	–	Ground pin
190	VFO13	O	nc
191	IDGATE	O	nc
192	DVDD3	–	D+3.3v
193	UDGATE	O	nc
194	WOBSI	I	nc
195	SDATA	O	RF serial data output
196	SDEN	O	RF serial data latch enable
197	SLCK	O	RF serial clock output
198	BDO	I	Flag of defect data input status
199	ADCVSS	–	Ground pin
200	ADIN	I	nc
201	RESUBI	I	nc
202	TEZISLV	I	Tracking error zero crossing low pass input
203	TEO	I	Tracking error input
204	CSO	I	Central servo input
205	FEO	I	Focus error input
206	RFL	I	Sub beam add input or RFRP low pass input
207	RFRP	I	TF ripple detect input
208	RFRP_AC	I	RF ripple detect input(through AC coupling)
209	HTRC	I	High frequency RF ripple zero crossing
210	PWMVREF	I	A reference voltage input for PWM circuitry. A typical value of 4.0v
211	PWM2VREF	I	A reference voltage input for OWM circuitry. A typical value of 2.0v
212	ADCVDD3	–	A+3.3v
213	RFDTSLVP	O	nc
214	RFDTSLVN	O	nc
215	RFON	I	negative input of RF differential signal
216	RFOP	I	Positive input of RF differential signal

SECTION 8 ELECTRICAL ADJUSTMENT

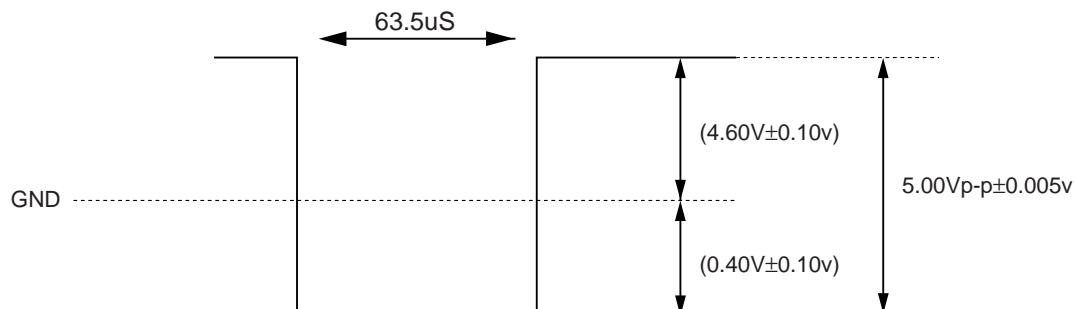
8-1. LCD ADJUSTMENT

8-1-1. How to adjust LCD COLOR

1) Connect CON 803, power apply, and then check DC power(DC 9.8V).

* Note that the adjustment cannot be made when the LCD panel open/close switch is turned on (LCD panel is closed).

2) VCO adjusting; Sync. Checking



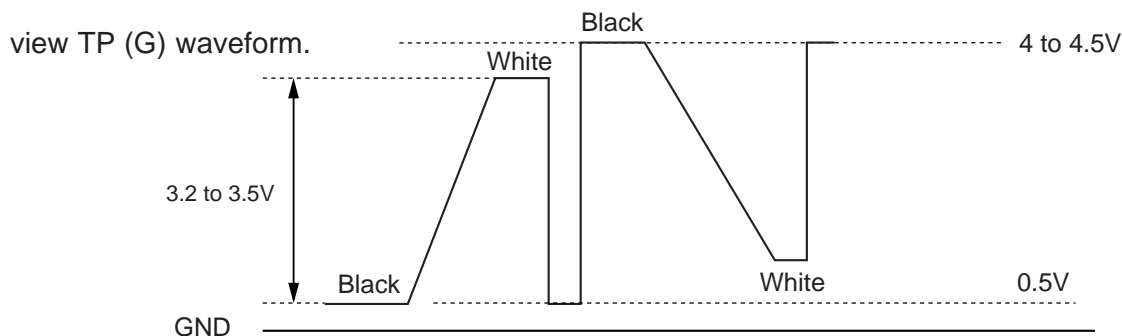
* VR801 adjust 5.00Vp-p±0.005v while viewing TP(VCOM)'s waveform.

* Check the pulse width is 63.5 μsec.

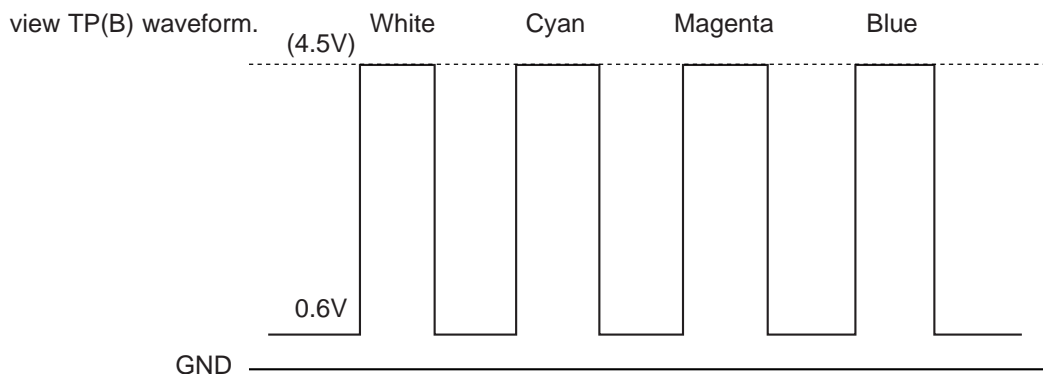
3) VCOM(VR809); Flicker adjusting (+4.6V±0.1v//−0.4V±0.1v)

4) Check the Waveform

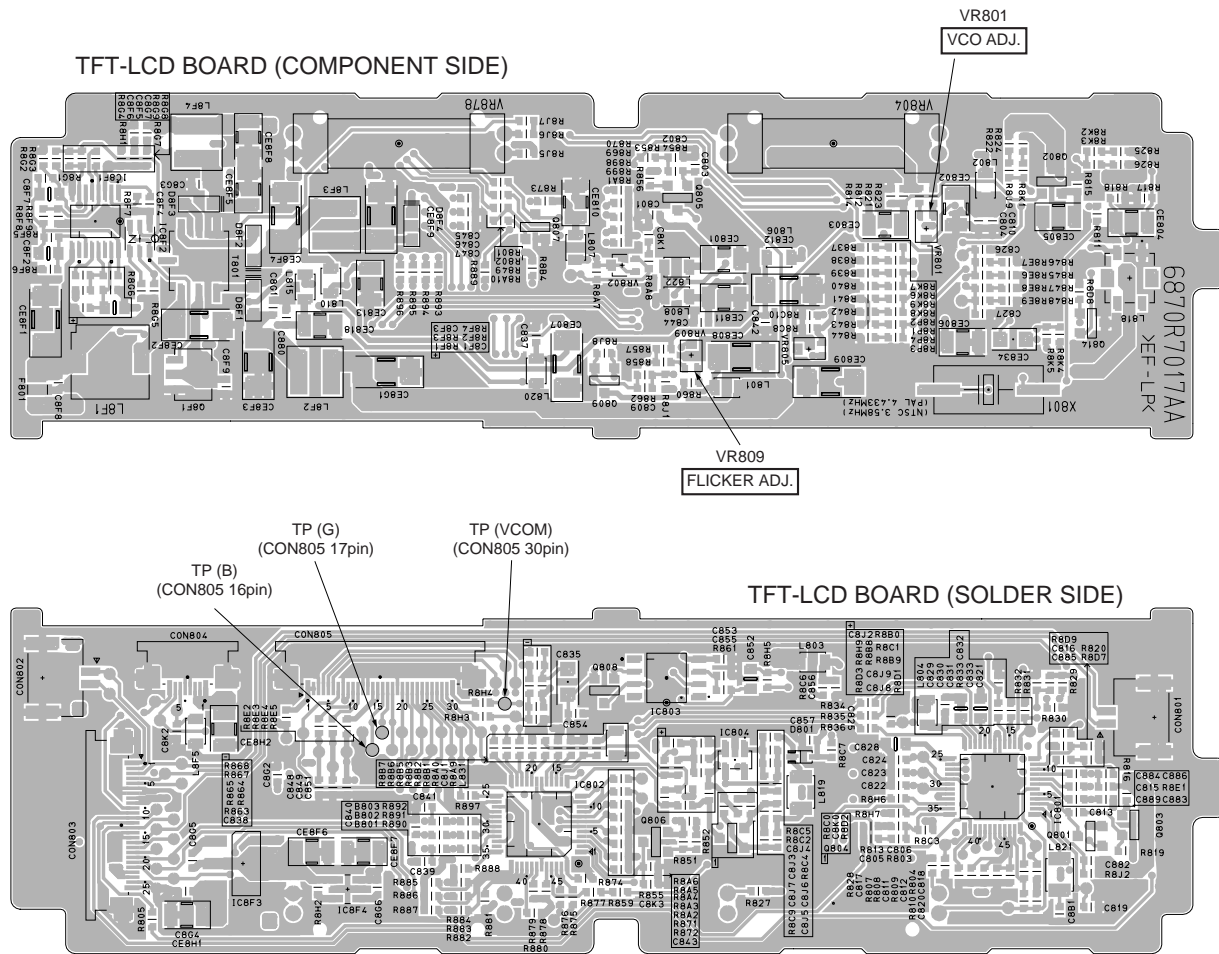
Input RAMP signal. COLOR control slide: MIN (−)



* Input COLOR BAR signal. (Sony NTSC DVD Test Disc 505, "1. Video Signal/1. Color Bar 100%")
White, Cyan, Magenta, Blue Signal conformity.



Adjustment and Checking Location:

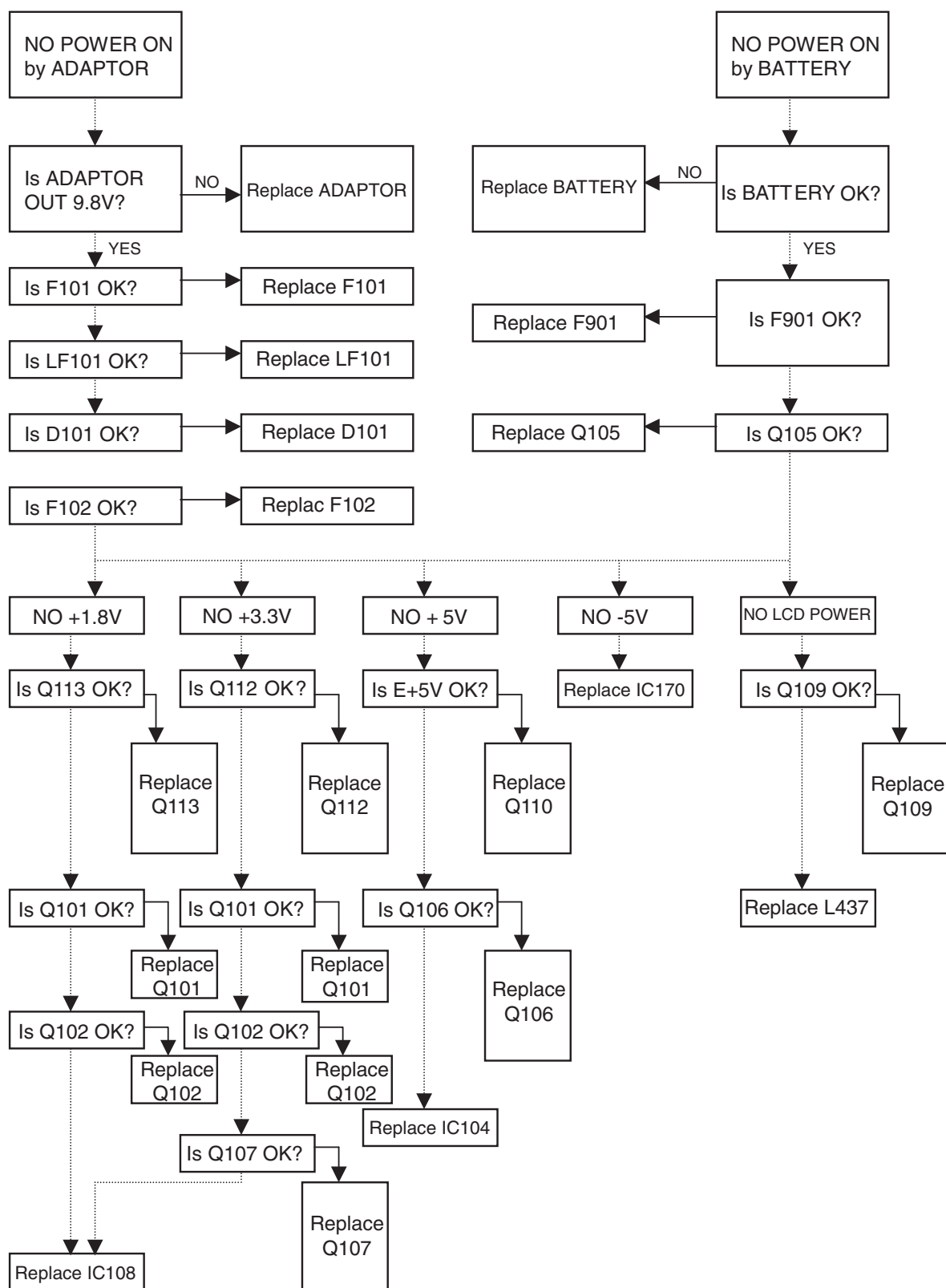


SECTION 9 TROUBLESHOOTING

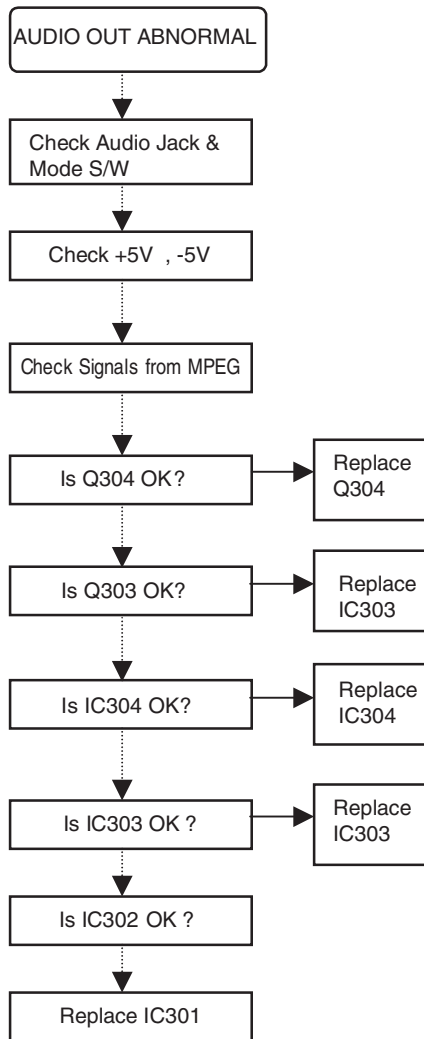
9-1. ELECTRICAL TROUBLE SHOOTING GUIDE

1. Power (DC-DC Converter) Circuit

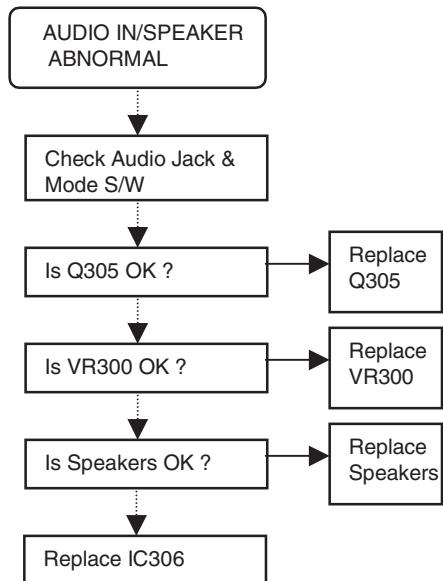
A.



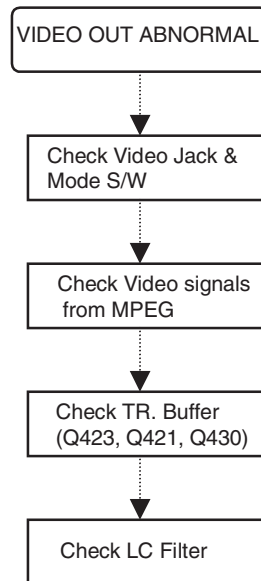
B. Audio Out abnormal



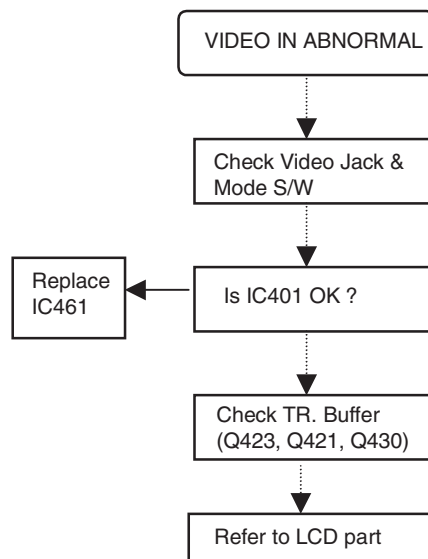
D. Audio In/Speaker abnormal



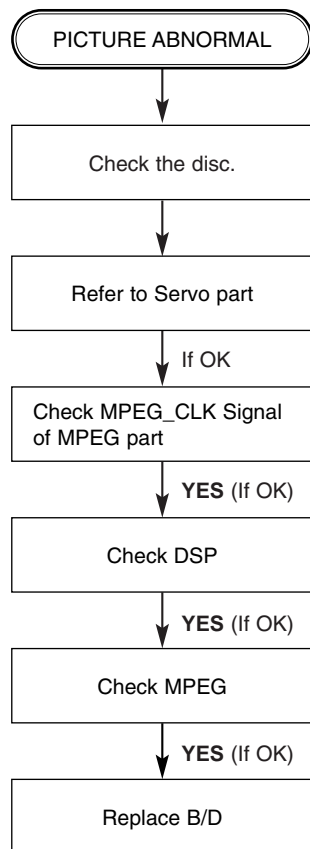
C. Video Out abnormal



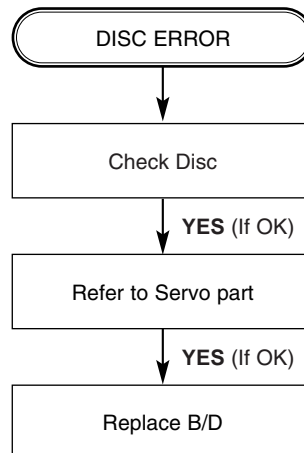
E. Video In abnormal



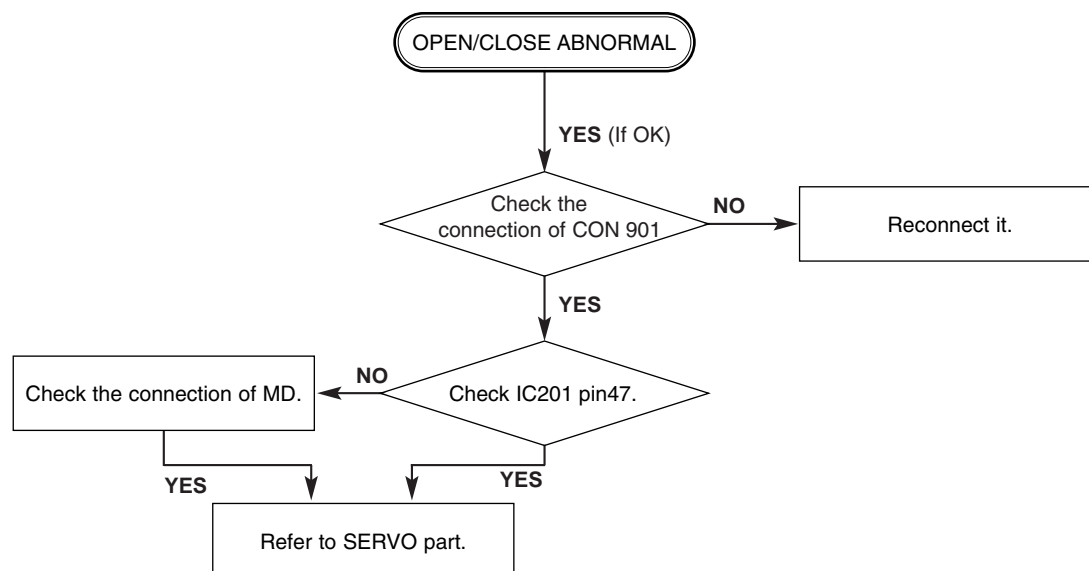
F. Picture abnormal



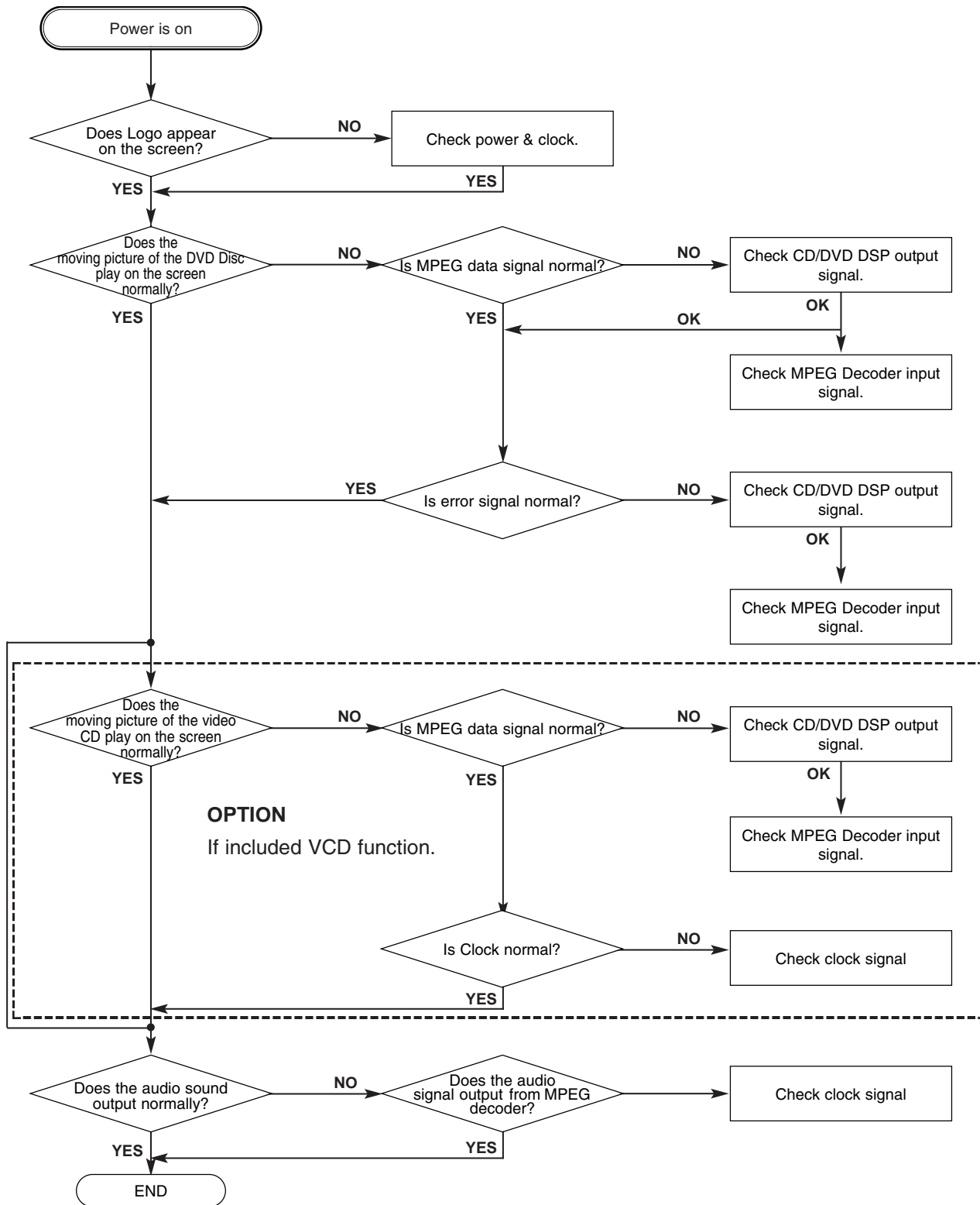
G. Disc Error



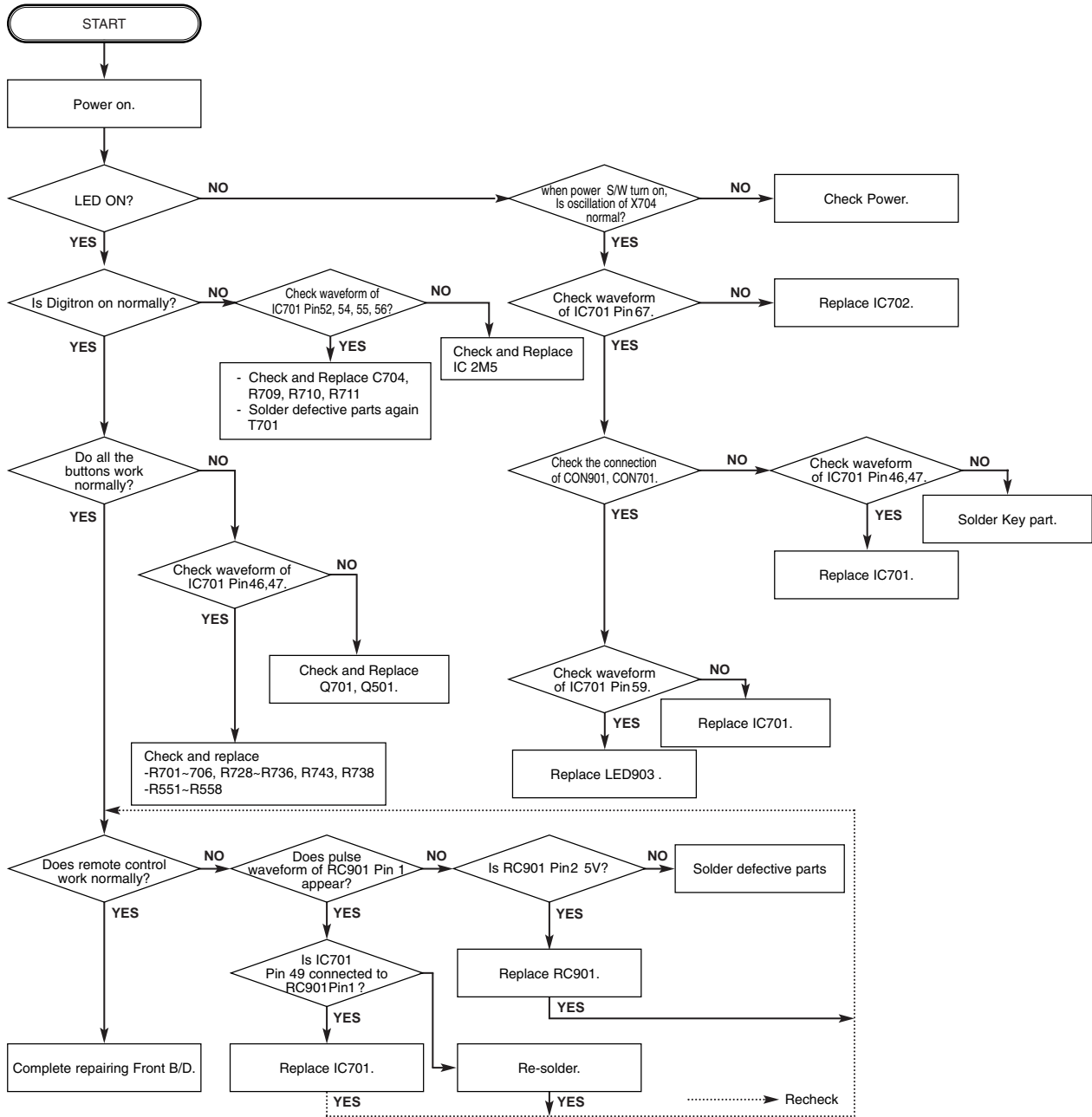
H. Open/Close abnormal



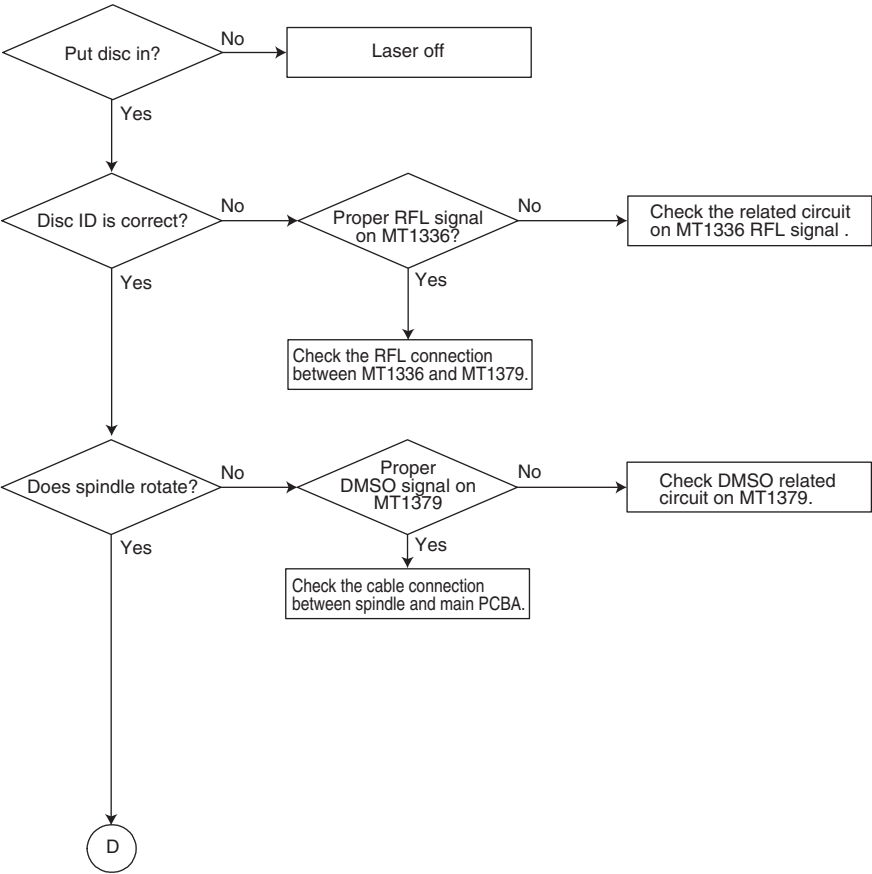
2. MPEG Circuit



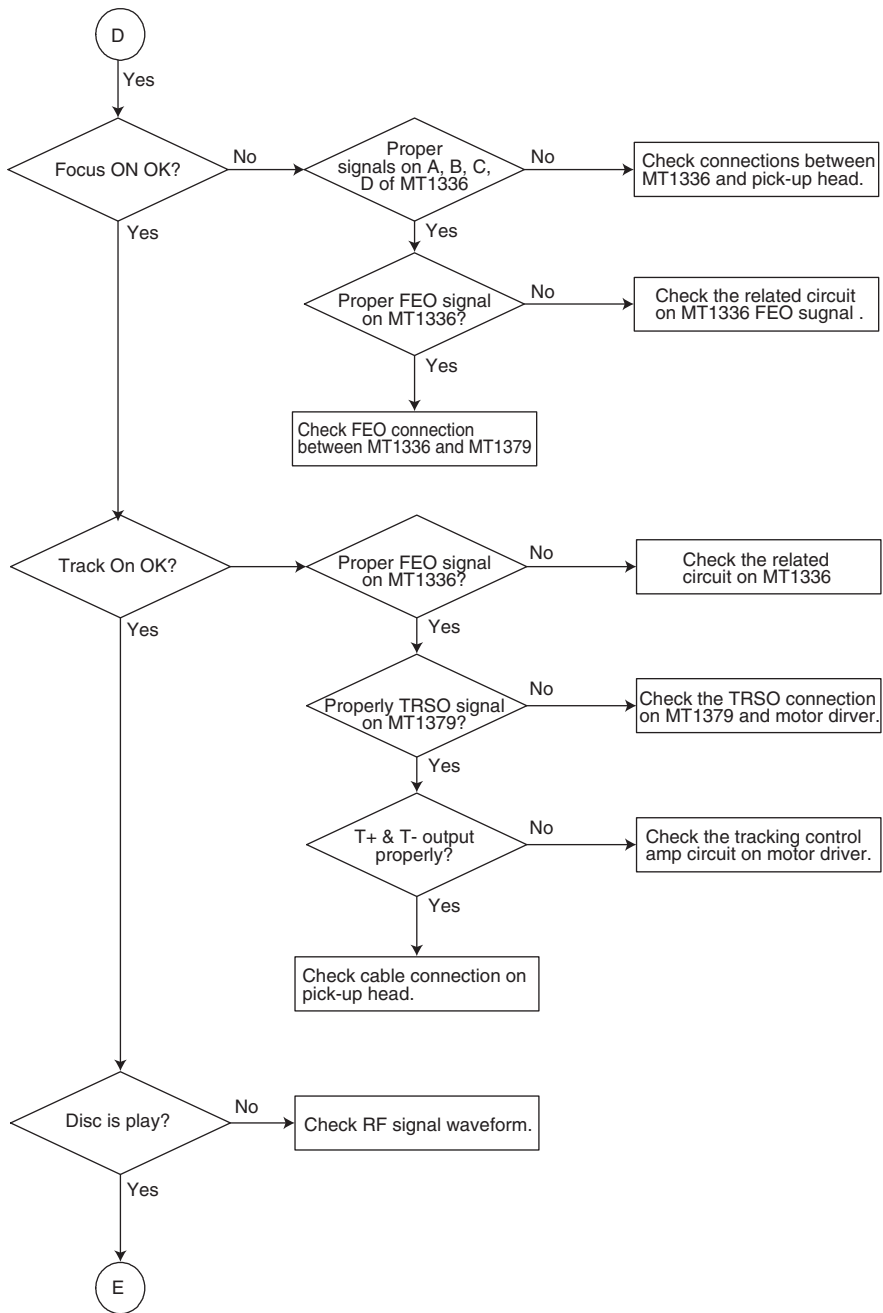
3. Front Circuit(Dogotrpm & Key)



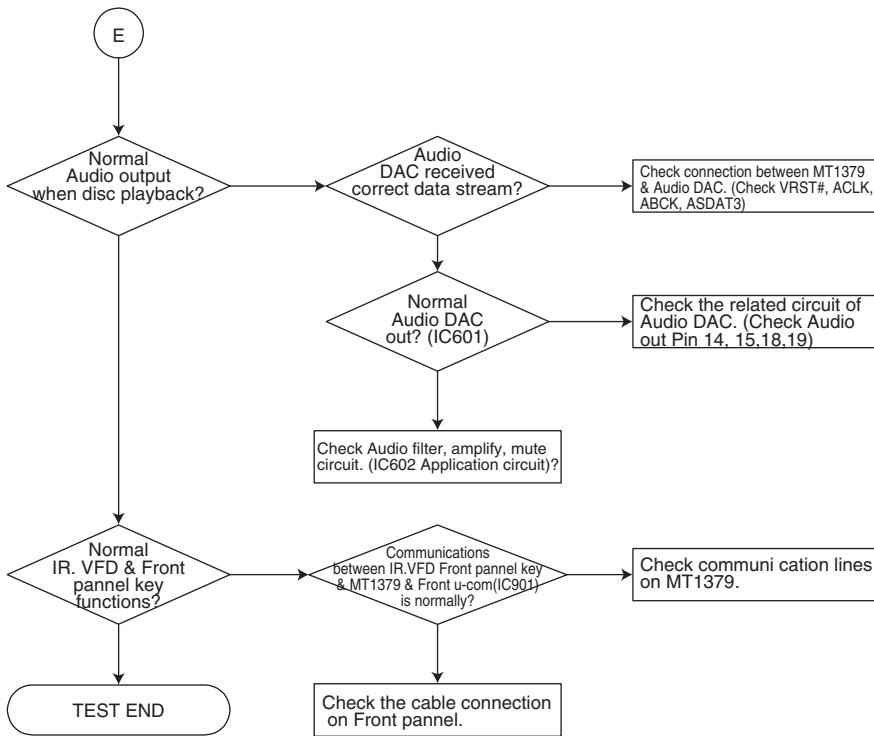
4. RF/Servo Circuit
A.



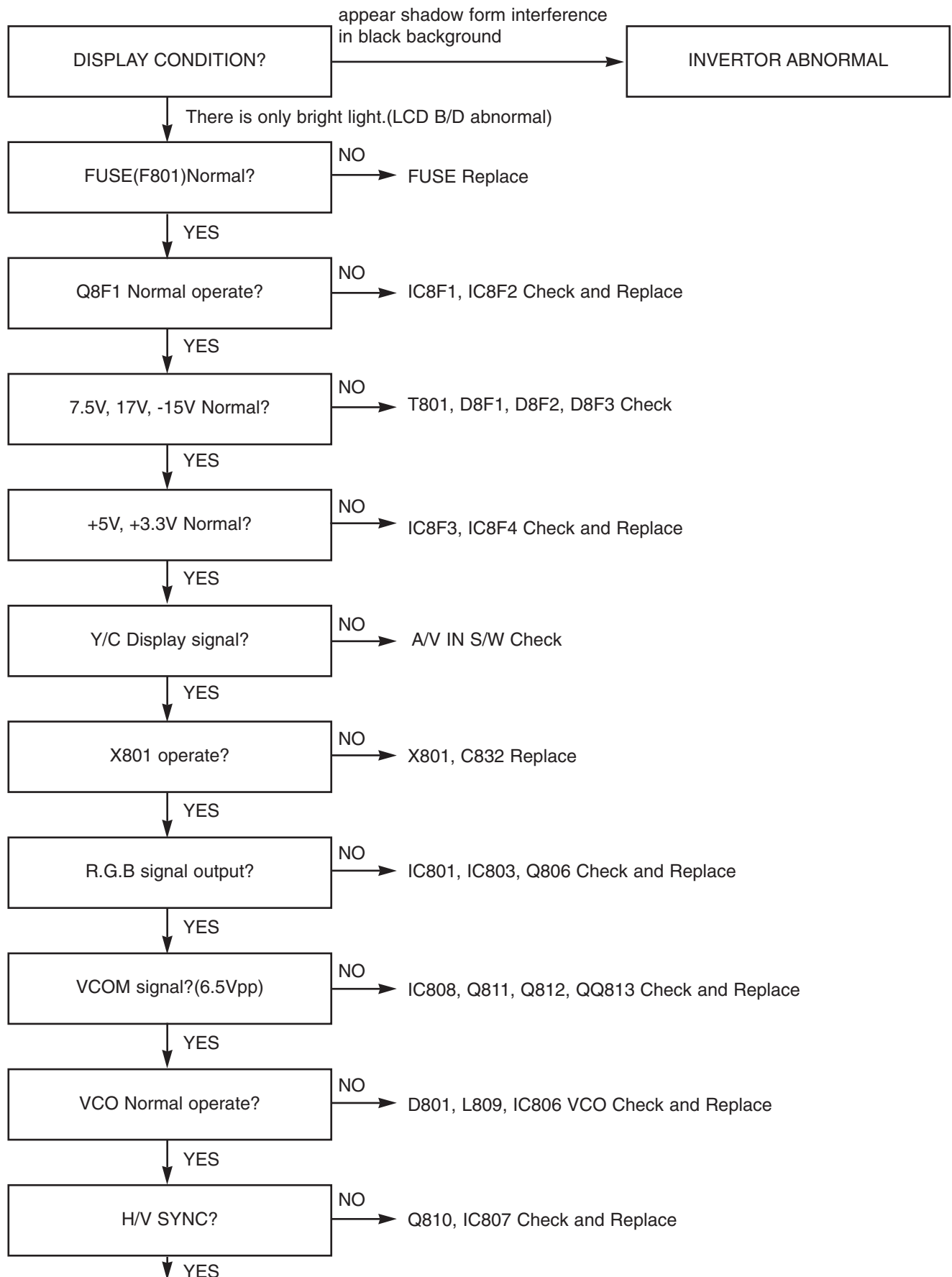
B.



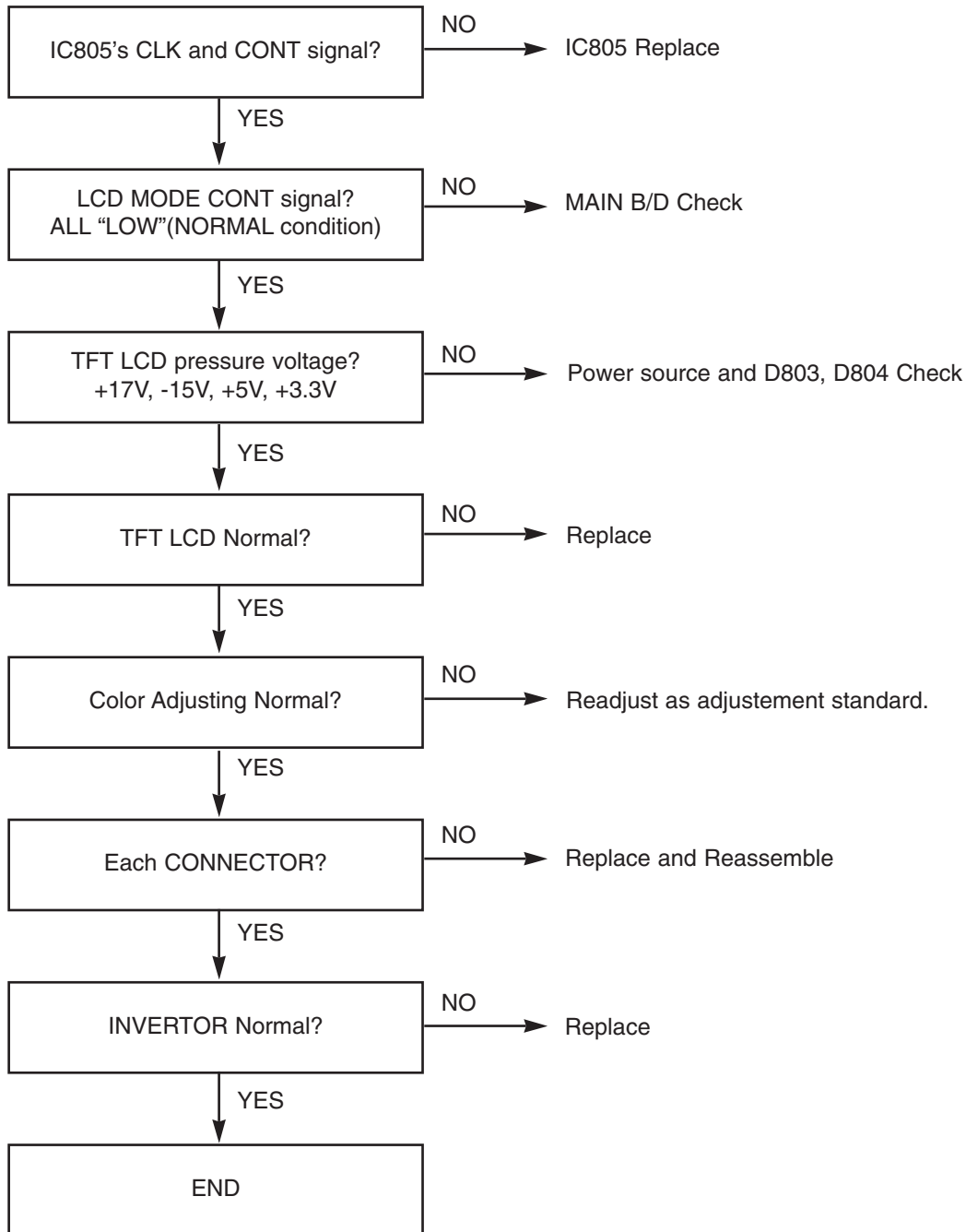
C.



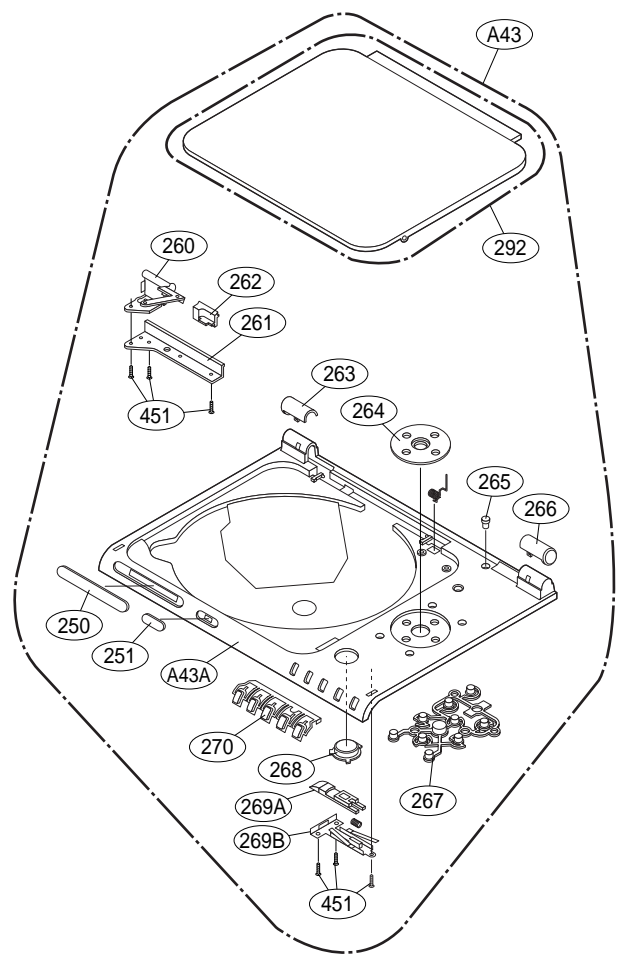
9-2. LCD TROUBLE SHOOTING GUIDE(1/2)



9-3. LCD TROUBLE SHOOTING GUIDE(2/2)

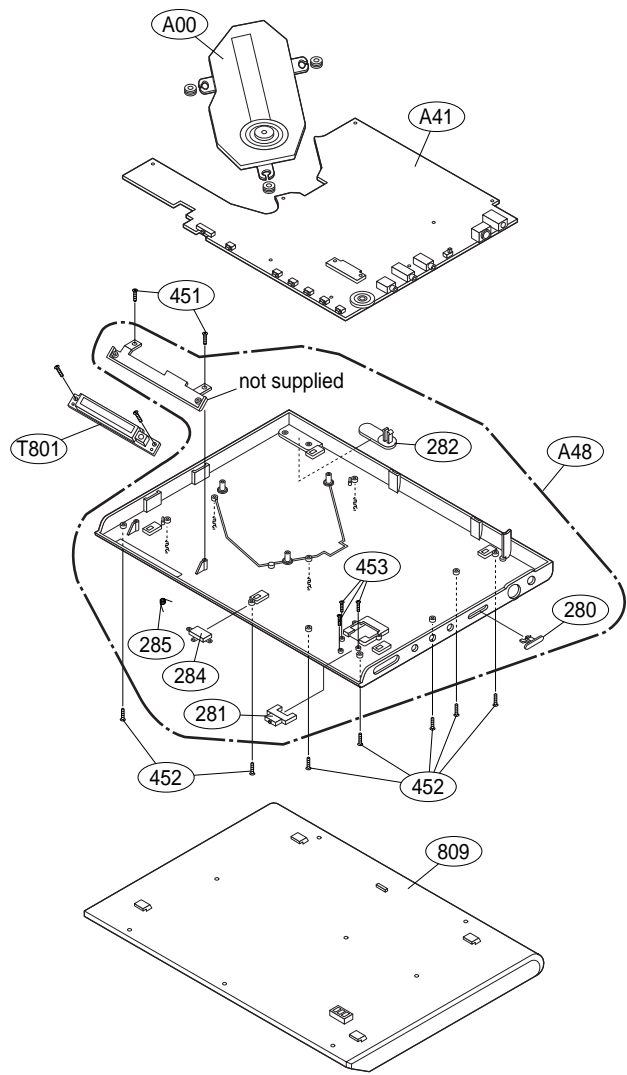


10-1-2. UPPER CASE SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
250	3-088-284-01	WINDOW,DECO		267	3-088-288-01	BUTTON	
251	3-088-285-01	KNOB		268	3-088-318-01	KNOB	
260	3-088-292-01	HINGE		269A	3-088-319-01	LEVER, EJECT	
261	3-088-293-01	SUPPORTER		269B	3-088-320-01	PLATE, LEVER EJECT	
262	3-088-294-01	COVER		270	3-088-321-01	BUTTON	
263	3-088-286-01	COVER		292	A-6071-657-A	DOOR ASSEMBLY	
264	3-088-287-01	DECORATION		451	3-088-282-01	SCREW,DRAWING	
265	3-088-298-01	HOLDER		A43	A-6071-655-A	CASE, TOP ASSY	
266		COVER		A43A	3-088-283-01	CASE	

10-1-3. BOTTOM CASE SECTION



The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
--	--

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
280	3-088-310-01	KNOB		453	3-088-306-01	SCREW,DRAWING	
281	3-088-303-01	COVER		809	9-885-049-45	BATTERY,LITHIUM	
282	3-088-302-01	SUPPORTER		\triangle A00	A-6071-659-A	DECK ASSEMBLY,VIDEO	
284	3-088-305-01	HOLDER		A41	A-6071-660-A	MAIN BOARD, COMPLETE	
285	3-088-304-01	SPRING		A48	A-6071-661-A	CASE BOTTOM ASSEMBLY	
451	3-088-282-01	SCREW,DRAWING		T801	9-885-049-27	LCD (LIQUID CRYSTAL DISPLAY)	
452	3-088-311-01	SCREW,DRAWING					

10-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA. . : μ A. . uPA. . : μ PA. .
uPB. . : μ PB. . uPC. . : μ PC. .
uPD. . : μ PD. .
- CAPACITORS
uF: μ F
- COILS
uH: μ H

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		INVERTER BOARD, COMPLETE *****					
		A-6071-660-A MAIN BOARD, COMPLETE *****					
		< DIODE >				< FUSE >	
D101	9-885-048-76	DIODE RB081L-20		\triangle F101	9-885-048-83	FUSE (3000mA/63V)	
D102	9-885-048-76	DIODE RB081L-20		\triangle F102	9-885-048-82	FUSE (1751mA/63V)	
D103	9-885-048-81	DIODE UDZS16B				< IC >	
D104	9-885-048-76	DIODE RB081L-20		\triangle IC104	9-885-048-97	IC MAX1744EUB-T	
D105	9-885-048-81	DIODE UDZS16B		\triangle IC108	9-885-048-98	IC MAX1775EEE-T	
D106	9-885-048-81	DIODE UDZS16B		\triangle IC170	9-885-048-90	IC BD6111FV	
D107	9-885-048-81	DIODE UDZS16B		IC201	9-885-048-87	IC MT1336E/C	
D109	9-885-048-81	DIODE UDZS16B		IC202	9-885-048-88	IC BA5929FP	
D110	9-885-048-81	DIODE UDZS16B					
D200	9-885-048-78	DIODE 1SS355		IC203	9-885-048-93	IC AN8473NSA	
D211	9-885-048-80	DIODE STZ6.8N		IC301	9-885-039-63	IC CS4391-KZR	
D212	9-885-048-80	DIODE STZ6.8N		IC302	9-885-039-46	IC NJM4580M	
D213	9-885-048-80	DIODE STZ6.8N		IC303	9-885-049-06	IC BU4052BCFV	
D214	9-885-048-80	DIODE STZ6.8N		IC304	9-885-039-46	IC NJM4580M	
D215	9-885-048-80	DIODE STZ6.8N					
D216	9-885-048-80	DIODE STZ6.8N		IC306	9-885-048-89	IC BA7786FP-Y	
D217	9-885-048-80	DIODE STZ6.8N		IC401	9-885-048-86	IC NJM2233BV	
D218	9-885-048-80	DIODE STZ6.8N		IC500	9-885-043-79	IC MT1379DEC	
D219	9-885-048-80	DIODE STZ6.8N		IC503	9-885-041-61	IC S524A40X21-SCT0	
D220	9-885-048-80	DIODE STZ6.8N		IC504	9-885-048-95	IC IS42S16400A-7T	
D221	9-885-048-80	DIODE STZ6.8N					
D222	9-885-048-80	DIODE STZ6.8N		IC505	9-885-048-94	IC MBM29LV160TE70NC	
D223	9-885-048-80	DIODE STZ6.8N		IC701	9-885-048-96	IC UPD78F9418AGK	
D224	9-885-048-80	DIODE STZ6.8N		IC702	9-885-049-01	IC XC61CN4402MR	
D225	9-885-048-80	DIODE STZ6.8N		IC703	9-885-049-07	IC 74VHC541	
						< JACK >	
D226	9-885-048-80	DIODE STZ6.8N		J101	9-885-049-35	JACK, DC POWER (DC IN 9.8V)	
D227	9-885-048-80	DIODE STZ6.8N		J301	9-885-049-39	JACK, FIBER OPTIC (AUDIO)	
D228	9-885-048-80	DIODE STZ6.8N		J302	9-885-049-36	JACK, PHONE (PHONES)	
D301	9-885-048-80	DIODE STZ6.8N		J403	9-885-049-37	JACK, PHONE (VIDEO)	
D302	9-885-048-80	DIODE STZ6.8N		J404	9-885-049-38	JACK, DIN (S-VIDEO OUT)	
D303	9-885-048-80	DIODE STZ6.8N		J406	9-885-049-30	SWITCH, SLIDE (LINE SELECT)	
D310	9-885-039-36	DIODE DAP202K-T146				< TRANSISTOR >	
D430	9-885-048-80	DIODE STZ6.8N					
D432	9-885-048-80	DIODE STZ6.8N		Q101	9-885-039-74	TRANSISTOR KTC3875S-GR-T1	
D433	9-885-048-80	DIODE STZ6.8N					

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Q102	9-885-039-74	TRANSISTOR	KTC3875S-GR-T1			< VARIABLE RESISTOR >	
Q105	9-885-049-09	TRANSISTOR	SI6965DQ				
△ Q106	9-885-049-10	TRANSISTOR	SI9407EY	VR300	9-885-049-23	VOLUME, SLIDE (VOLUME ▲)	
△ Q107	9-885-049-11	TRANSISTOR	SI9939DY			< VIBRATOR >	
Q109	9-885-049-12	TRANSISTOR	SI3863DV				
Q110	9-885-048-92	IC SI3865DV		X500	9-885-049-24	RESONATOR, CRYSTAL (27MHz)	
Q112	9-885-048-92	IC SI3865DV		X701	9-885-049-26	RESONATOR, CERAMIC (5MHz)	
Q113	9-885-048-92	IC SI3865DV					
Q115	9-885-049-09	TRANSISTOR	SI6965DQ				
Q116	9-885-039-74	TRANSISTOR	KTC3875S-GR-T1			A-6071-656-A TFT-LCD BOARD, COMPLETE	
Q117	9-885-039-74	TRANSISTOR	KTC3875S-GR-T1			*****	
Q200	9-885-049-15	TRANSISTOR	KTA1504S-Y-T1			< CONNECTOR >	
Q202	9-885-049-14	TRANSISTOR	2SB1132 (BA)-T100				
Q204	9-885-049-14	TRANSISTOR	2SB1132 (BA)-T100	CON803	9-885-049-40	CONNECTOR (CIRC), FFC/FPC 26P	
Q303	9-885-039-68	TRANSISTOR	KRA103S-T1			< DIODE >	
Q304	9-885-039-68	TRANSISTOR	KRA103S-T1				
Q305	9-885-049-15	TRANSISTOR	KTA1504S-Y-T1	D801	9-885-048-79	DIODE 1SV214	
Q306	9-885-039-68	TRANSISTOR	KRA103S-T1	D8F1	9-885-048-77	DIODE CRS02	
Q307	9-885-049-13	TRANSISTOR	KRC103S	D8F2	9-885-048-77	DIODE CRS02	
Q308	9-885-039-68	TRANSISTOR	KRA103S-T1	D8F3	9-885-048-77	DIODE CRS02	
Q309	9-885-039-68	TRANSISTOR	KRA103S-T1	D8F4	9-885-048-77	DIODE CRS02	
Q310	9-885-039-68	TRANSISTOR	KRA103S-T1			< FUSE >	
Q314	9-885-039-74	TRANSISTOR	KTC3875S-GR-T1	△ F801	9-885-048-84	FUSE (750mA/63V)	
Q315	9-885-039-74	TRANSISTOR	KTC3875S-GR-T1			< IC >	
Q316	9-885-049-15	TRANSISTOR	KTA1504S-Y-T1				
Q317	9-885-049-15	TRANSISTOR	KTA1504S-Y-T1	IC801	9-885-048-91	IC IR3Y29BM	
Q318	9-885-039-74	TRANSISTOR	KTC3875S-GR-T1	IC802	9-885-048-85	IC HS353146	
Q319	9-885-049-15	TRANSISTOR	KTA1504S-Y-T1	IC803	9-885-049-02	IC AD820AR	
Q320	9-885-039-74	TRANSISTOR	KTC3875S-GR-T1	IC804	9-885-049-03	IC AD8614ART	
Q321	9-885-039-68	TRANSISTOR	KRA103S-T1	△ IC8F1	9-885-049-00	IC TL1451ACPWLE	
Q322	9-885-039-68	TRANSISTOR	KRA103S-T1				
Q323	9-885-039-74	TRANSISTOR	KTC3875S-GR-T1	IC8F2	9-885-049-18	TRANSISTOR IMZ1A	
Q324	9-885-039-74	TRANSISTOR	KTC3875S-GR-T1	IC8F3	9-885-048-99	IC LM1117MPX-5.0	
Q404	9-885-049-15	TRANSISTOR	KTA1504S-Y-T1	IC8F4	9-885-049-05	IC BA033LBSG-TR	
Q408	9-885-039-74	TRANSISTOR	KTC3875S-GR-T1			< TRANSISTOR >	
Q415	9-885-039-74	TRANSISTOR	KTC3875S-GR-T1	Q801	9-885-039-74	TRANSISTOR KTC3875S-GR-T1	
Q416	9-885-039-74	TRANSISTOR	KTC3875S-GR-T1	Q802	9-885-039-74	TRANSISTOR KTC3875S-GR-T1	
Q417	9-885-039-74	TRANSISTOR	KTC3875S-GR-T1	Q803	9-885-039-74	TRANSISTOR KTC3875S-GR-T1	
Q418	9-885-039-74	TRANSISTOR	KTC3875S-GR-T1	Q804	9-885-039-74	TRANSISTOR KTC3875S-GR-T1	
Q419	9-885-039-74	TRANSISTOR	KTC3875S-GR-T1	Q805	9-885-039-74	TRANSISTOR KTC3875S-GR-T1	
Q421	9-885-049-15	TRANSISTOR	KTA1504S-Y-T1				
Q423	9-885-049-15	TRANSISTOR	KTA1504S-Y-T1	Q806	9-885-049-16	TRANSISTOR KTA1505S-Y -T1	
Q430	9-885-049-15	TRANSISTOR	KTA1504S-Y-T1	Q807	9-885-039-74	TRANSISTOR KTC3875S-GR-T1	
Q501	9-885-049-13	TRANSISTOR	KRC103S	Q808	9-885-039-74	TRANSISTOR KTC3875S-GR-T1	
Q702	9-885-049-15	TRANSISTOR	KTA1504S-Y-T1	Q809	9-885-049-16	TRANSISTOR KTA1505S-Y -T1	
Q703	9-885-039-74	TRANSISTOR	KTC3875S-GR-T1	△ Q8F1	9-885-049-17	TRANSISTOR 2SD1898R	
		< SWITCH >				< VARIABLE RESISTOR >	
S701	9-885-049-32	SWITCH, TACT (POWER/HOLD)		VR801	9-885-049-20	VOLUME, ROTARY	
SW201	9-885-049-34	SWITCH, DETECTOR (TRAY OPEN SW1)		VR804	9-885-049-21	VOLUME, SLIDE (COLOR)	
SW202	9-885-049-34	SWITCH, DETECTOR (TRAY OPEN SW2)		VR809	9-885-049-08	RESISTOR, METAL GLAZED (CHIP)	
SW500	9-885-049-29	SWITCH, PUSH (LCD OPEN SW)		VR878	9-885-049-22	VOLUME, SLIDE (BRIGHT)	
SW700	9-885-049-31	SWITCH, TACT (■)				< VIBRATOR >	
SW701	9-885-049-31	SWITCH, TACT (■)					
SW702	9-885-049-31	SWITCH, TACT (▶)		X801	9-885-049-25	RESONATOR, CRYSTAL (3.579545MHz)	
SW703	9-885-049-31	SWITCH, TACT (▶▶)					
SW704	9-885-049-31	SWITCH, TACT (▶▶▶)					

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

TN-LCD

SWITCH

Ref. No.	Part No.	Description	Remark
		TN-LCD BOARD *****	
		< LED >	
D801	9-885-048-75	LED LBH1025 R/TP	
D802	9-885-048-75	LED LBH1025 R/TP	
		< IC >	
RC801	9-885-049-42	IC TSOP6240	
		< TRANSISTOR >	
Q801	9-885-039-74	TRANSISTOR KTC3875S-GR-T1	
		< LIQUID CRYSTAL DISPLAY >	
T801	9-885-049-27	LCD (LIQUID CRYSTAL DISPLAY)	

SWITCH BOARD, COMPLETE *****

< DIODE >

D901	9-885-048-80	DIODE STZ6.8N
D902	9-885-048-80	DIODE STZ6.8N
D903	9-885-048-80	DIODE STZ6.8N
D904	9-885-048-80	DIODE STZ6.8N
D905	9-885-048-80	DIODE STZ6.8N

D906	9-885-048-80	DIODE STZ6.8N
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< SWITCH >

SW901	9-885-049-33	SWITCH, TACT (DISPLAY)
SW903	9-885-049-33	SWITCH, TACT (TOP MENU)
SW904	9-885-049-33	SWITCH, TACT (MENU)
SW906	9-885-049-33	SWITCH, TACT (LCD MODE)
SW907	9-885-049-33	SWITCH, TACT (RETURN)
SW911	9-885-049-33	SWITCH, TACT (DOWN)
SW912	9-885-049-33	SWITCH, TACT (UP)
SW913	9-885-049-33	SWITCH, TACT (RIGHT)
SW914	9-885-049-33	SWITCH, TACT (LEFT)
SW915	9-885-049-33	SWITCH, TACT (PUSH ENTER)

ACCESSORIES *****

⚠	9-885-049-28	POWER CORD	
	A-6071-666-A	INSTRUCTION ASSEMBLY	
⚠	9-885-049-19	BATTERY,MANGANESE	
	9-885-049-43	CABLE,COAXIAL	
	9-885-049-44	CABLE,DIN	
⚠	9-885-049-41	ADAPTER,AC-DC	
	1-478-365-11	REMOTE CONTROLLER ASSEMBLY	
		(RMT-D163A)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

